

Instruction Book

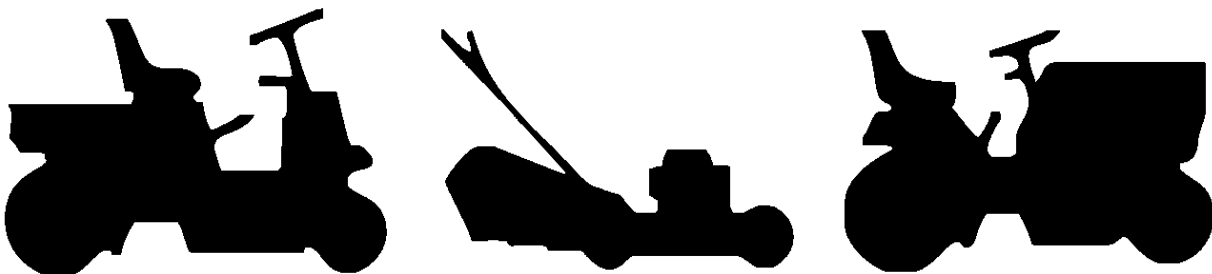
Riding Mower

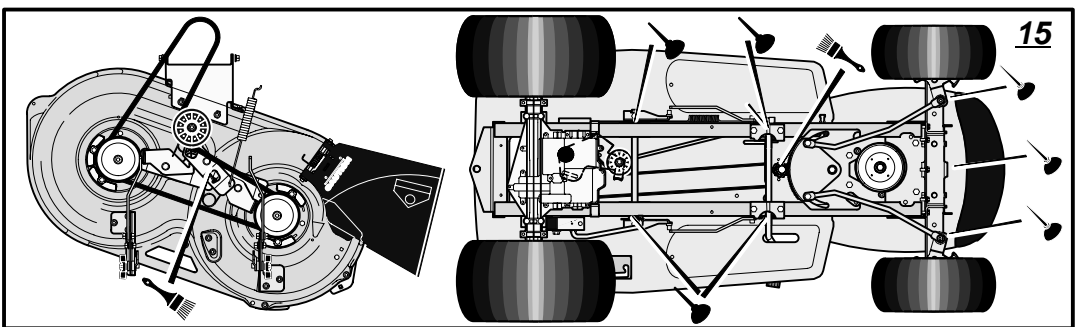
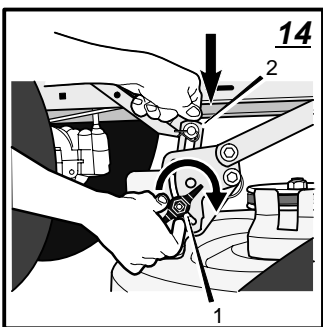
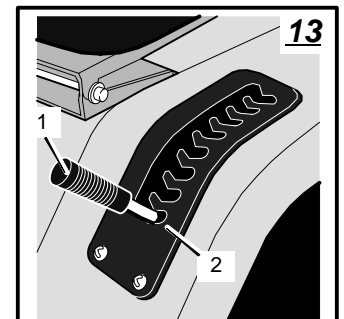
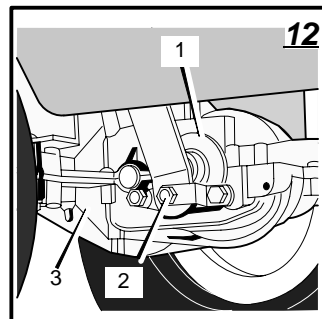
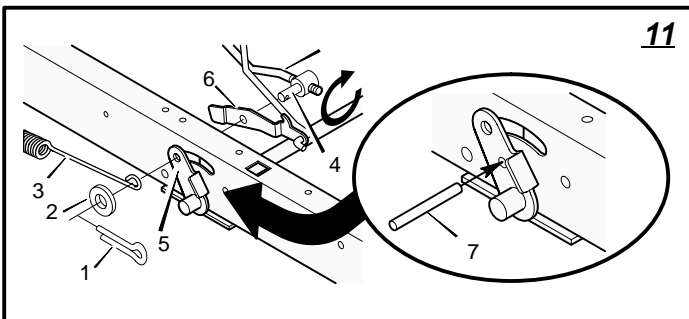
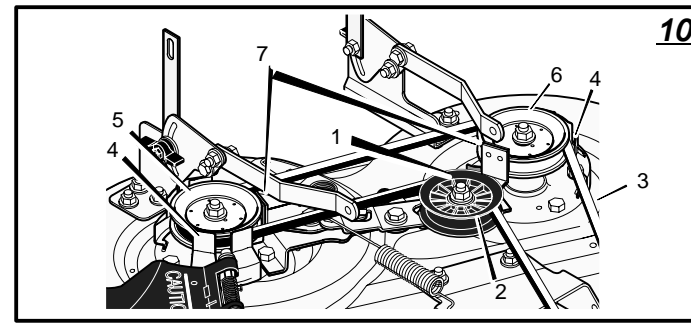
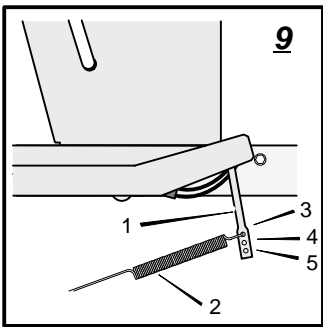
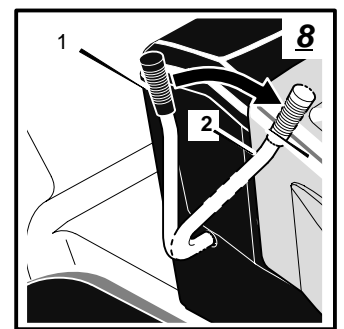
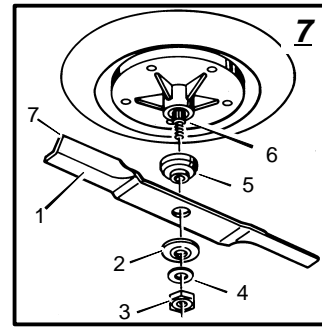
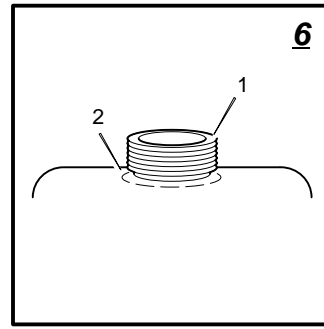
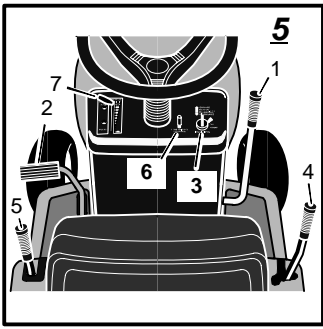
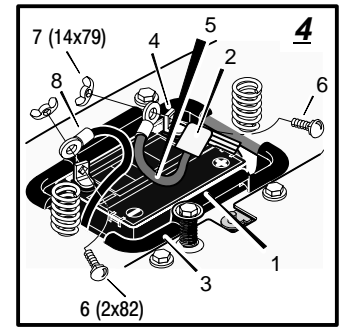
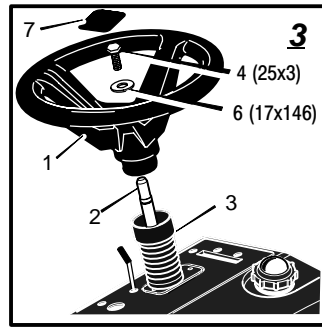
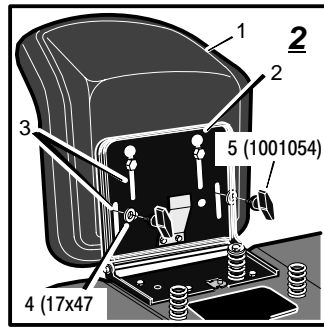
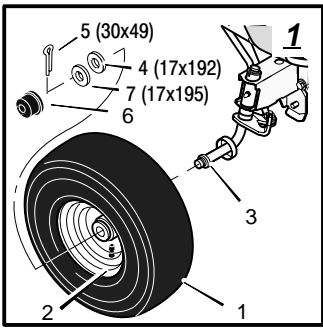
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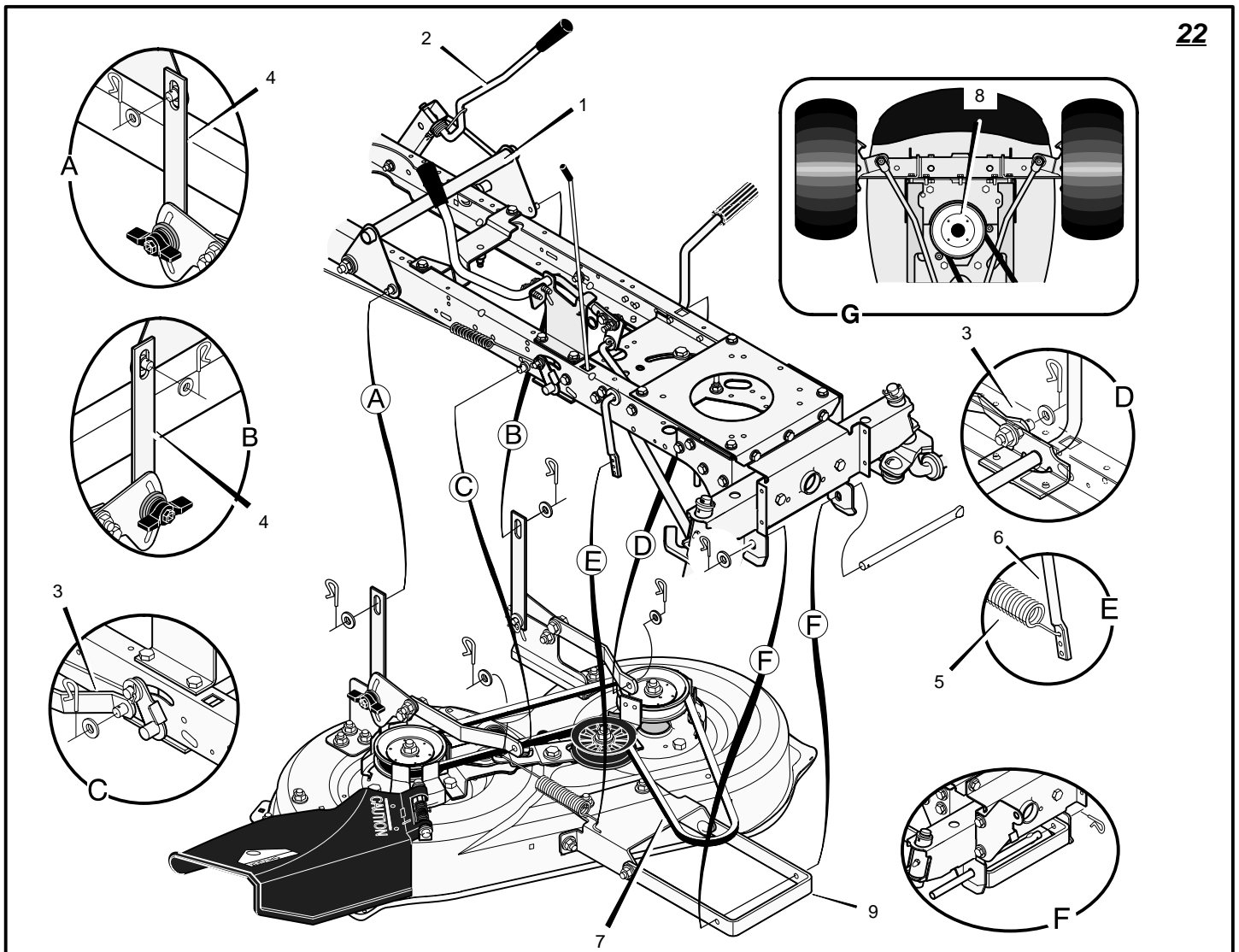
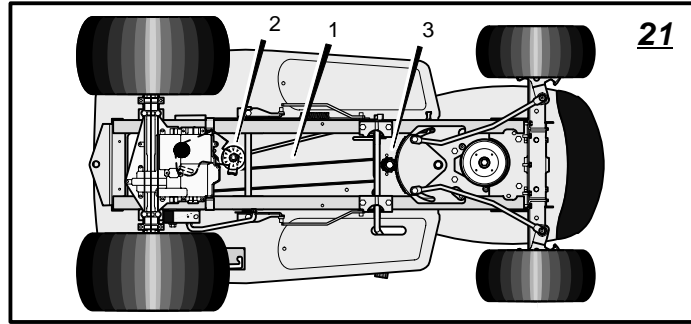
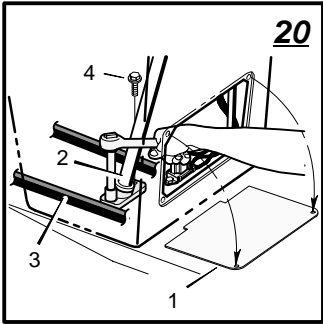
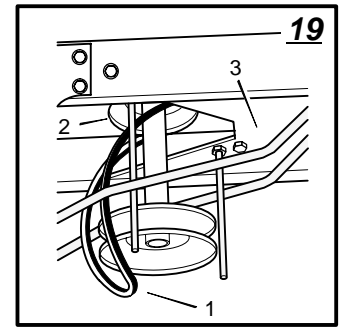
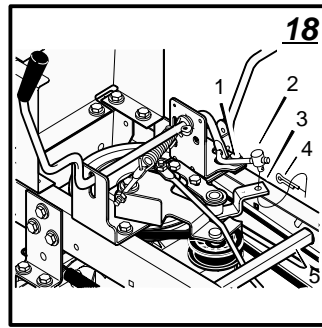
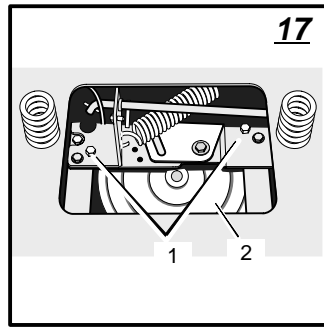
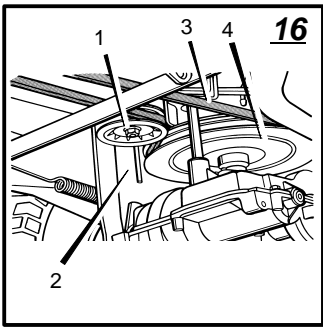
Read and keep this book for future reference. This book contains important information on *SAFETY, ASSEMBLY, OPERATION, AND MAINTENANCE.*

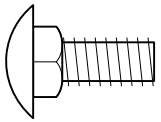
PRODUCT INFORMATION

The owner must be certain that all the product information is included with the unit. This information includes the INSTRUCTION BOOKS, the REPLACEMENT PARTS and the WARRANTIES. This information must be included to make sure state laws and other laws are followed.

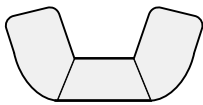




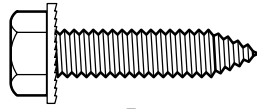




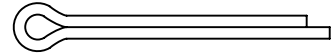
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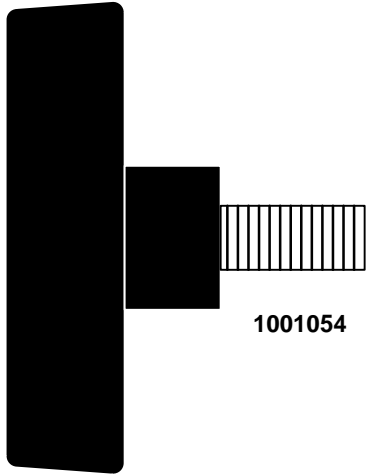
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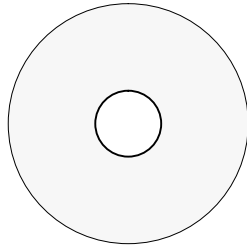
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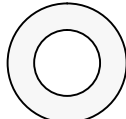
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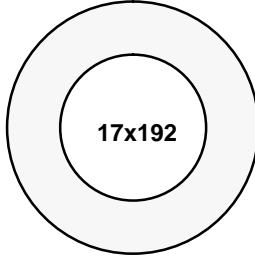
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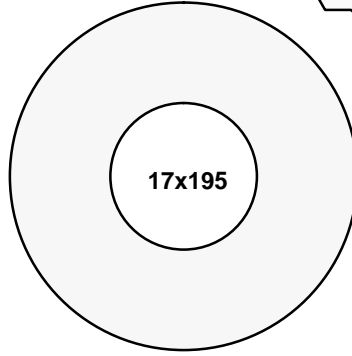
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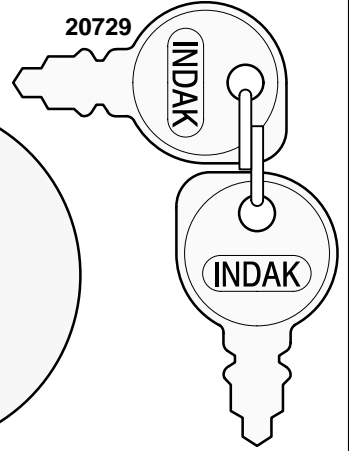
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CONTENTS

OWNER'S INFORMATION	5
SAFE MOWING GUIDE	7
STEPS TO FOLLOW	9
ASSEMBLY	10
OPERATION	11
MAINTENANCE	12
TROUBLE SHOOTING CHART	15
SLOPE GUIDE	16
HOW TO ORDER REPAIR PARTS	17

TWO YEAR LIMITED WARRANTY

Murray, Inc. warrants to the original purchaser that this unit shall be free from defects in material and workmanship under normal use and service for a period of **Two (2) Years** from the date of purchase; however, this warranty does not cover engines, accessories (such as snow blowers, snow blades, grass baggers and ploughs), transmissions, batteries and Normal Wear Parts (except as noted below) or transaxles as the companies that manufacture these items furnish their own warranties and provide service through their authorized field service facilities. For additional information, see the warranties covering these particular parts. If you are uncertain whether your unit contains or is equipped with one or more of these parts, consult your dealer prior to purchase. Subject to

the terms and conditions noted in this Limited Warranty, we shall, at our option, repair or replace at no cost to the original purchaser any part covered by this Limited Warranty during the applicable warranty period.

In the event the battery proves defective within ninety (90) days from the date of purchase, we will replace it without charge. If the battery proves defective after (90) days but within one hundred twenty (120) days from the date of purchase, we will replace it for a charge of one half (1/2) of the retail price of the battery in effect at the time of return.

Normal Wear Parts are defined as belts, blades, blade adapters, pneumatic tires, headlights and seat covers. These parts are warranted to be free from defects in material and workmanship as delivered with the product. Any claim for repair or replacement of Normal Wear Parts must be made within thirty (30) days of the date of purchase. No claims involving damage caused from material use, abuse or misuse will be honored.

This Murray, Inc. **Two (2) Year Limited Warranty** is your exclusive remedy; however, this warranty is void or does not apply to any unit that has been tampered with, altered, misused, abused or used for rental or other commercial and/or professional (non-homeowner) uses. Your warranty does not cover minor mechanical adjustments which are not due to any defect in material or workmanship. For assistance in making such

adjustments, consult your Instruction Book. To make a claim under this Murray, Inc. **Two (2) Year Limited Warranty**, return the unit (or if authorized in advance, the defective part) along with your proof of purchase to an Authorized Service Center near you. To locate the nearest Authorized Service Center, call the Central Parts Distributor for your area shown in the list provided with your unit or check the Yellow Page listings in your local telephone directory. If you return the entire unit, we will repair the unit. If we authorize the return of the defective part only, we will either replace or repair the part. In the case of a defect in a transmission or differential (as distinguished from a transaxle), the entire transmission or differential must be returned since they do not include user serviceable parts. This Murray, Inc. **Two (2) Year Limited Warranty** gives you specific legal rights, and you may also have other rights which vary from state to state. **This Limited Warranty is given in lieu of all other expressed and implied warranties including the implied warranty of merchantability and warranty of fitness for a particular purpose.** If you need additional information on this written warranty or assistance in obtaining service, write or call:

MURRAY, INC., International Sales, PO Box 268, Brentwood, TN 37024, USA
Fax (615) 373-6633.

OWNER'S INFORMATION

This instruction book is written for a person with some mechanical ability. Like most service books, not all the steps are described. Steps on how to loosen or tighten fasteners are steps anyone can follow with some mechanical ability. Read and follow these instructions before you use the unit.

Know your product: If you understand the unit and how the unit operates, you will get the best performance. As you read this manual, compare the illustrations to the unit. Learn the location and the function of the controls. To help prevent an accident, follow the operating instructions and the safety rules. Keep this manual for future reference.

IMPORTANT: Many units are not assembled and are sold in cartons. It is the responsibility of the owner to make sure the assembly instructions in this manual are exactly followed. Other units are purchased in an assembled condition. On assembled units, it is the responsibility of the owner to make sure the unit is correctly as-

sembled. The owner must carefully check the unit according to the instructions in this manual before it is first used.



WARNING: Look for this symbol to indicate important safety precautions. This symbol indicates: "Attention! Become Alert! Your Safety Is At Risk."

Responsibility Of The Owner

The responsibility of the owner is to follow the instructions below.

1. Carefully read and follow the rules for safe operation.
2. Follow all the assembly and preparation instructions.
3. Inspect the unit.
4. Make sure that the operator of the unit knows how to correctly use all standard and accessory equipment.

5. Operate the unit only with guards, shields, and other safety items in place and working correctly.
6. Correctly adjust the unit.
7. Service the unit only with authorized or approved replacement parts.
8. Complete all maintenance on the unit.

Environmental Awareness

- Do not fill the engine's fuel tank completely full.
- Drain fuel for off-season storage.
- Use only unleaded gasoline.
- Service the air cleaner regularly.
- Change oil regularly. Use 30W oil in summer.
- Tune-up the engine regularly.
- Keep equipment in efficient operating condition.
- Dispose of used engine oil properly.
- Dispose of used engine oil properly.

Safe Operation Practices for Ride-On Mowers.

This cutting machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

I. General Operation

1. Read, understand and follow all instructions in the Instruction Book, on the machine, the engine and with any attachments before starting.
2. Only allow responsible adults, who are familiar with the instructions, to operate the machine.
3. Clear the area of objects such as rocks, toys, wire, etc., which could be picked up and thrown by the blade.
4. Be sure the area is clear of other people before mowing. Stop the machine if anyone enters the area.
5. Never carry passengers.
6. Turn off power to the blades or any attachments before backing up. Do not mow in reverse unless absolutely necessary. Always look down and behind before and while backing.
7. Be aware of the mower discharge direction and do not point it at anyone. Do not operate the mower without either the entire grass bagger or the mower guard in place.
8. Slow down before turning.
9. Never leave a machine unattended with the engine running. Always turn off the blade(s), set the parking brake, stop the engine and remove the key before dismounting.
10. Turn off power to attachment(s) when transporting or not in use. Turn off the blade(s) when not mowing.
11. Stop the engine before removing the grass bagger or unclogging the chute.
12. Mow only in daylight or good artificial light.
13. Do not operate the machine while under the influence of alcohol or drugs or when very tired.
14. Watch for traffic when operating near or crossing roadways.
15. Use extra caution when loading or unloading the machine into a trailer or truck.
16. Turn off all attachment clutches before attempting to start the engine.
17. Always wear goggles, safety glasses, or an eye shield when you operate the unit to protect your eyes from foreign objects that can be thrown from the unit. Always wear eye protection when you make an adjustment or repair to the machine.
18. Use care when pulling loads or using heavy equipment.
 - a. Use only approved drawbar hitch points.
 - b. Limit loads to those you can safely control.
 - c. Do not turn sharply. Use care when backing.
 - d. Use counterweights or wheel weights when suggested in the Instruction Book.
19. Do not operate this machine if you are taking drugs or other medication which can cause drowsiness or affect your ability to operate this machine.
20. Do not use this machine if you are mentally or physically unable to operate this machine safely.
21. Data indicates that operators, age 60 years

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and above, are involved in a large percentage of riding mower related injuries. These operators should evaluate their ability to operate a riding mower safely enough to protect themselves and others from serious injury.

II. Slope operation

Slopes and rough terrain are major factors related to loss-of-control and tip-over accidents, which can result in severe injury or death. ALL slopes require extra caution. If you cannot back up the slope or if you feel uneasy on the slope, do not mow it. See the "Slope Guide" in the back of this book to check for safe operation.

DO

1. Mow up and down slopes, not across.
2. Remove obstacles such as rocks, limbs, etc...
3. Watch for holes, ruts or bumps. Uneven terrain could overturn the machine. *Tall grass can hide obstacles.*
4. Use slow speed. Choose a low enough gear so that you will not have to stop or shift while on the slope.
5. Use slow speed on slopes. Do not make sudden speed changes.
6. Follow the manufacturer's recommendations for wheel weights or counterweights to improve stability.
7. Use extra care with grass baggers or other attachments, they can change the stability of the machine.
8. Keep all movement on the slopes **slow and gradual**. Do not make sudden changes in speed or direction.
9. Avoid starting or stopping on a slope. If tires lose traction, turn off the blades and proceed slowly **straight down** the slope.

DO NOT

1. **Do not** turn on slopes unless absolutely necessary, then only turn slowly and gradually downhill, if possible.
2. **Do not** mow drop-offs, ditches or embankments. A wheel over the edge or an edge caving in could cause a sudden overturn and an injury or death.
3. **Do not** mow on wet grass. Reduced traction could cause sliding.
4. **Do not** try to stabilize the machine by putting your foot on the ground.
5. **Do not** use a grass bagger or other rear mounted accessories on steep slopes (greater than 10 degrees).

III. Children

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the mowing activity. NEVER assume that children will remain where you last saw them.

1. Keep children out of the mowing area and in the watchful care of another responsible adult.

2. Be alert and turn the engine off if children enter the area.
3. Before and when backing, look **behind and down** for small children.
4. Never carry children or any passengers, even with the blades off. They may fall off and be seriously injured or interfere with the safe operation of the machine.
5. Never allow children to operate the machine. Instruct children in the potential dangers of the machine.
6. Use extra care when approaching blind corners, shrubs, trees or other objects that may obscure vision.

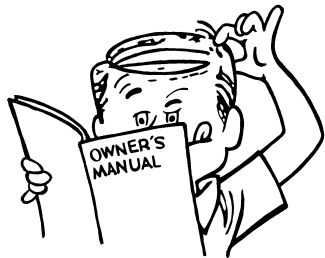
IV. Service

1. Use extra care when handling gasoline and other fuels. Fuels are flammable and the vapors are explosive.
 - a. Use only an approved container.
 - b. Never remove the gas cap or add fuel with the engine running. Allow the engine to cool for several minutes before refueling. Do not smoke.
 - c. Never refuel the machine indoors.
 - d. Never store the machine with fuel in the tank or fuel container inside where there is an open flame, such as a water heater.
2. Never start or run the engine inside a closed area.
3. Keep all nuts and bolts, especially the blade attachment nuts tight. Frequently check the blade(s) for wear or damage such as cracks and nicks. A blade that is bent or damaged must be immediately replaced with an original equipment blade from an authorized service dealer. For safety, replace the blade every two years. Keep the equipment in good condition.
4. Never tamper with the safety devices. Check their proper operation regularly.
5. To reduce fire hazards, keep the machine free of grass, leaves or other debris build-up. Clean up oil or fuel spills. Allow the machine to cool before storing.
6. Stop and inspect the equipment if you strike an object. Repair, if necessary, before re-starting.
7. Never make adjustments or repairs with the engine running. The carburetor can be adjusted with the engine running. Do not change the engine governor settings or over-speed the engine.
8. Grass bagger components are subject to wear, damage and deterioration, which could expose moving parts or allow objects to be thrown. For storage, always make sure the grass bag is empty. Frequently check components and replace with manufacturer's recommended parts when necessary.
9. Mower blade(s) are sharp and can cut. Wrap the blade(s) or wear gloves and use extra caution when servicing them or the blade housing area.
10. Check the brake operation frequently. Adjust and service as required.
11. Wait for all movement to stop before servicing any part of the unit.

SAFE MOWING GUIDE

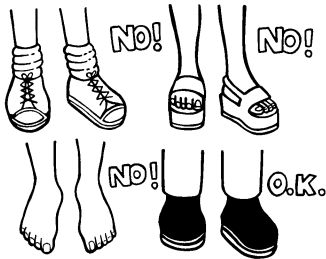
Each person that operates power equipment must learn to use correct and safe mowing procedures. **To help you learn, carefully read the following pages.** Most of the time the operator was not correctly shown or did not read the instructions on the unit or in the Instruction Book before using the unit. Also, some operators do not have enough experience. The result is unsafe use, endangering the operator, bystanders and the equipment. Another result can be a poor appearance of the area mowed.

Read this book. Read the instructions on the unit. Operate the mower according to the Safe Mowing Guide. Follow all safety rules, cautions or warnings in this book and on the unit. Make sure anyone that uses the unit reads the instructions and is told how to safely operate the mower.



The mower will give you good service and durability, if operated in normal conditions. If the mower is not correctly serviced or is used where the terrain is rough or unsuitable, product performance and safety will be decreased.

Correct clothing is an important part of safe mowing. Safety glasses will protect the eyes from objects discharged by the mower. Safety shoes with steel plates can protect a foot from injury by the blade. For protection from objects discharged from the mower, wear clothing that will cover the arms and legs.



Before you start cutting the grass, practice using the mower in a large open and level area. Learn the location of the controls on the mower. Know the purpose of the controls and how they work. In an emergency, how fast you can stop the blade is important. Learn how to control the mower at all times.

Many engines are started by hand. When you use a pull start or rope start, place your feet apart and away from the blade(s). Hold the rope handle tight. Never wrap the rope around your arm or fingers for a "better grip". To start the engine, follow the instructions on the mower, in this book and in the engine operating instructions.

For electric start engines, sit in the seat to start the engine. The battery can be dangerous. Follow the instructions on the battery, the acid container, and in this book when working with the

battery. Even small batteries have enough voltage to cause an injury. Always be careful.

The mower is designed to be operated by one person. Never let another person ride with you on the unit or on any accessories. A passenger will make the unit harder to control, block the visibility or distract the operator and is dangerous to the operator, the passenger and the equipment. Without a passenger seat, the passenger can fall from the mower or contact dangerous parts. A mower is not a toy for showing off or for giving rides.



Never cut a wet lawn. Wet grass can cause an accident, affect mower performance and can cause problems with future lawn growth and appearance. Wet grass is slippery and can cause the mower to slip. Someone can get injured by touching the blade(s). Wet grass tends to clog the mower, causing poor discharge. Cut wet grass will collect on the lawn, retarding the growth of the grass. Also, getting the mower wet will cause parts to rust and decrease the life of the unit.



When you look over the lawn, remember obstacles that cannot be removed, like pipes, stumps or rocks. Keep away from these obstacles that can cause damage to the mower or injury to the operator or a person near the mower. Clear the area of rocks, toys, wire or other loose objects. These items can damage the mower or can be discharged by the mower blade. The blade of a power mower rotates very fast. It can discharge rocks and other objects over a long distance which can be dangerous. The force of the objects can break windows, cause injuries or even put an eye out. Most of the time the injury is to a person, like a child. Keep every person completely away from the area to be mowed. Make sure the grass is not discharged toward anyone. Planning your mowing pattern has a double advantage. It can decrease the possibility of an injury and make the clean up after mowing easier.



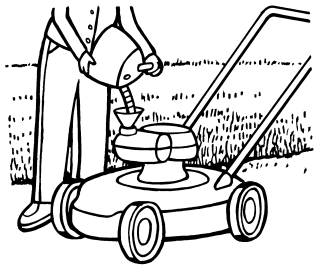
Check the terrain of the area to be mowed. Mow in a pattern that will keep you away from dangerous areas. Check the distance you need to stop and the distance available to turn. Slopes and rough terrain must be mowed carefully and some areas must not be mowed at all. With riding mowers, mow up and down the hill. When you must mow rough terrain or on slopes, drive slowly and stop in these areas only in an emergency. Before you ride up or down a slope, try to back straight up the slope. Do not ride up or down a slope that is too steep to back straight up. See the "Guide" in the back of this Instruction Book to check any slopes.



Before you start cutting, make sure the mower was completely assembled according to the Instruction Book. If the mower was completely assembled at the store, you must still check the mower according to the assembly instructions. Make sure the mower is correctly assembled and that all fasteners are tight. Make sure the engine has the correct amount of oil. Check these items often during the life of the mower.

Your mower has a gasoline engine. Gasoline is a dangerous fuel. Keep gasoline only in an approved safety gasoline container. Do not keep large amounts of gasoline. When you add gasoline to the fuel tank, do not smoke. Store the gasoline container and the mower in an area that has good ventilation. Also, keep the gasoline away from any flames like the pilot light of a furnace or any other source of ignition. If the mower is to be stored for more than a few weeks, remove the gasoline from the fuel tank. When inside an enclosure, do not add gasoline to the fuel tank. Before you add gasoline, move the mower outside and add gasoline carefully. Before you start the engine, remove any gasoline from the outside of the fuel tank or from the mower. Warm gasoline will expand. Leave some space in the fuel tank for the gasoline to expand. Also, the fuel cap has a vent hole for fuel vapors. Always use the correct fuel cap. Failure to follow safety rules about gasoline will cause fires and explosions, injury to you and damage to the

equipment and other property.



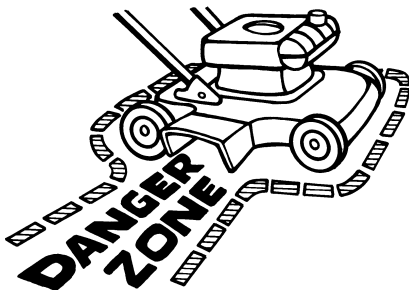
If you add gasoline to an engine that is running or hot, the result can be an explosion. Before you add gasoline, stop the engine and let the engine cool for several seconds. Remove dry grass and other debris from the mower. Keep the mower clean to improve the performance, help the engine and transmission run cooler, extend the life of moving parts, and decrease the danger of a fire.

Fires and explosions are not the only dangers when working around a mower. The engine, transmission, and the muffler will get hot in several minutes when the engine is running. Do not touch these parts of the mower. Stop the engine. Let the engine and transmission cool before servicing the mower. Remember, exhaust fumes are dangerous. Never operate the engine inside a building.

When you get a new mower, it can be a new experience for the family. Tell each person how a mower can be dangerous. Remember, a mower is not a toy. A mower is not to be used by children or anyone not old enough, strong enough or that does not have experience.

If the mower is not correctly assembled, not operated correctly, or not regularly serviced, the mower can be dangerous. The most important rule to follow is always use good judgement and common sense. Mow safely and carefully.

Your mower will easily cut thick grass. Fingers, feet and other parts can also be cut by the blade. Injuries occur when the operator does not think and reaches into the chute opening. Always operate the mower as if the blade is rotating. Do not service or make an adjustment, except to the carburetor, while the engine is running.



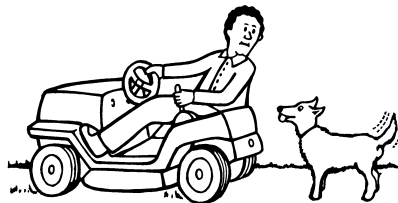
Use only accessories that are factory approved for your mower. The wrong accessory can decrease the safety of the mower and can even damage the unit. Read and follow the instructions included with the accessory and the mower.

Use only original equipment or replacement parts that are factory approved for service. If you F-030771L

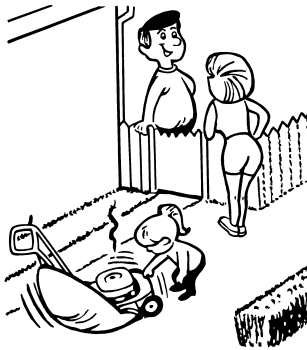
need service, select an Authorized Service Center for your mower. If you do the work on the unit, follow the instructions in the Instruction Book.



When you mow, remember that children are attracted to the mower. Always use caution when mowing around obstacles like trees or shrubs or when moving backward. Only mow in a forward direction if possible. Your visibility is decreased when you mow backward. Also, the blades are made to cut while the unit is moving forward. If you mow backward, the cutting performance decreases.



Before you leave the mower, stop the engine. Remove the key. Disengage and lower any attachment. Set the parking brake. Never mount or dismount from the seat while the engine is running. An accident can occur if you touch the brake, speed control pedal, throttle, or blade control while the engine is running. Mount and dismount from the seat on the side of the unit that is marked ENTER-EXIT.



Make sure you are in good condition when you mow. When you mow for several hours your reflexes will decrease and your mind will not be as alert. Take a short break or an accident can occur. If the temperature is hot, use caution to prevent dehydration. If you are tired, angry or not completely alert, do not operate the mower. If you use alcohol, medication or drugs, do not use the mower or any type of power equipment.

Engine speed is a key to safe mowing and to a good looking lawn. The maximum speed of the engine was set at the factory. Do not change the setting of the engine governor.

Select the maximum engine and ground speed that is right for the terrain and the height of the grass. The blade cuts best when the engine is operating at maximum speed. The engine and transmission will also run cooler at maximum engine speed. Also, the grass bagger will function better when the engine is operating at maximum speed. On slopes, decrease the ground speed and use care making sure the mower feels safe to operate.

If the weather conditions are bad, do not mow. If weather conditions become bad, stop cutting and finish later. It is dangerous to cut grass in the rain. Always find protection in an electrical storm. If the weather conditions are extra dry, protect your eyes with safety glasses from the dust and from the objects discharged by the mower. Also, a dust or a pollen mask can help.

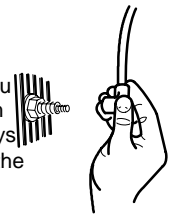


Your mower is equipped with a number of safety devices which are important to the safety of the operator and bystanders and must never be changed or removed from the mower. If a safety device is lost, damaged or no longer functions, repair or replace the device before you operate the mower.

It is best to mow during the day. If you must mow at night, make sure there is enough light for safe operation.

Your mower will require regular maintenance and service. The maintenance schedule depends on the hours of use. Also, mowing conditions can change the schedule. Check the Instruction Book for more information. Correct maintenance will help the mower function safely.

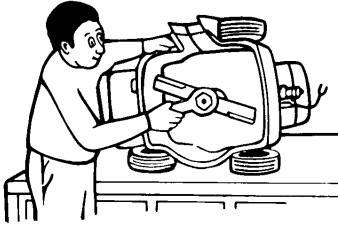
Do not service the mower (except for the carburetor adjustment) while the engine is running. Before you service the unit, even with the engine stopped, always disconnect the wire from the spark plug to prevent the engine from starting.



If you hit a large object during operation, stop the engine. Remove the wire from the spark plug. Carefully inspect the mower for damage. Before you start the engine again, make the necessary repairs. If you feel new or excessive vibration, immediately stop the engine and check for the problem. Vibration can be a warning of a problem. Keep all nuts, bolts and screws tight.

The blade is the most dangerous part of the mower. Frequently check the blade and the blade mounting fasteners. Keep the fasteners tight. If the blade hits a solid object, stop the engine. Remove the wire from the spark plug. Check for a blade that is bent, cracked or for other damages. Before you start the engine, replace a damaged blade(s). For safety, replace

the blade every two years.



A sharp blade decreases the workload on the engine and more evenly cuts grass. Frequently sharpen the blade for a better looking cut. Use the left side of the mower housing to trim near an object.

A grass bagger is a good accessory for your mower. For best performance and safety, make sure the grass bagger is approved for use with your mower. Follow the assembly and operation instructions included with the grass bagger. Some grass baggers require a special blade for best performance. Before you attach, check, or empty the grass bagger, always stop the engine. Before each use of the grass bagger, check for cracks, wear or deterioration. Before you use the grass bagger, replace a damaged part with a replacement part approved by the factory.



For you to have a good green lawn, follow the mowing procedures below. Do not cut the grass too short. If you cut the grass too short you can cause the grass to become yellow or make the lawn look brown. Use a lower height of cut in cool months when the grass is thicker. Raise the height of cut in hot dry periods. If you cut the grass with a blade that is not sharp or at a slow engine speed you can damage the grass. Move the throttle control to the FAST position when mowing and using the grass bagger. Also, use a slower ground speed when using the grass bagger.

If you change the direction or pattern of cut slightly every time you mow will make the grass grow stronger and thicker. Do not add oil or gasoline to the mower while on the lawn. Spilled oil or gasoline can kill the grass. In high or thick grass, do not try to cut all the grass the first time. Raise the height of cut on the first cutting and lower the height for the next cutting. Another way is to cut only part of the width of the mower and decrease your ground speed (not the engine) to move more slowly so that the mower can discharge the grass as it moves forward.

Understand the controls and how they work. Learn the ground speed(s) of your mower. Check the stopping distance required at different travel speeds. Check the turning radius of the mower. The controls on your riding mower are different from an automobile. The throttle is op-

erated by hand and holds the engine speed constant until it is changed. The location of the travel speed control is different from that of an automobile. Also, the brake and clutch systems are different. Remember the procedures to follow in an emergency. Remember, turning off the engine ignition switch will stop the blade and the drive mechanism. If the traction of the wheels is lost or does not feel safe, disengage all systems and stop the engine. Dismount from the mower. Push the unit to a safe place before you begin mowing again.

Your unit has an electrical system that includes an operator presence switch in the seat. The operator presence switch detects if the operator is sitting on the seat. The engine will stop if the operator leaves the seat when the blade engagement control is engaged. This operator presence switch is a safety device only. It must not regularly be used to stop the engine or the blade. There are other control systems on the mower for this purpose. Always keep the operator presence switch and other safety devices and controls in place and operating for your protection.

Remember, your mower is a tool that can be dangerous if it is not correctly used. Follow the instructions in this Instruction Book. Safe and careful use of the mower will give you many safe hours of problem free use.

STEPS TO FOLLOW

Before Mowing

- Be sure to dress correctly. Wear hard shoes, not sandals or tennis shoes.
- Examine the blade. A blade that is bent, cracked, or damaged must be replaced with a factory replacement blade.
- Fill the fuel tank outside. Clean off spilled fuel.
- Read and follow the Owner's Manual, the instructions with the engine, and the instructions with any attachments. Owner's Manual instructions are for your safety and the safety of others.
- Exhaust fumes are dangerous. Start the engine outside.
- Make sure all safety devices are in place and working correctly.
- Operation of the mower is only for a person that has experience.
- Wet grass can be dangerous. Let the grass dry.
- Instruct children and others to keep away from the work area.
- Never cut the grass without good light.
- Pick up loose objects. Remove them from the mowing area.

While Mowing

- Watch for fixed objects and avoid them. They can damage the mower or cause injury.
- A hot engine, muffler and transmission will cause a burn. Do not touch.
- Inclines and slopes must be carefully mowed. See the "Guide" in the back of this book to check a slope.
- Lack of daylight or good artificial light is cause to stop mowing.
- Examine the mower, the blade, and other parts for damage after hitting a foreign object or if the unit vibrates excessively.
- Do not make adjustments or repairs without stopping the engine (except for carburetor). Disconnect the spark plug wire.
- On or near roads, watch out for traffic. Direct discharge away from roads.
- When mowing, avoid areas where traction is unsure. Before and while moving backwards, look behind and down for small children.
- In heavy grass, raise the cutting height. Cut slower. Stop the engine to remove clogged grass from the mower.
- Never remove any safety related parts.
- Do not pour gasoline into a engine that is hot or running.

After Mowing

- Always let the mower cool before storing in an enclosed area.
- Foreign material on the mower is dangerous. Clean off grass, leaves, grease and oil before storing.
- Tighten all loose nuts, bolts and screws before you use the unit.
- Empty and clean any grass catcher or other accessory.
- Remove the key or disconnect the spark plug wire to prevent unauthorized use.
- Make sure the mower is not kept near a source of ignition. Gas fumes can cause an explosion.
- Only original parts or factory approved substitutes can be used to service the mower.
- When storing the mower for an extended period, remove the fuel from the fuel tank.
- Instruct children to leave the mower alone. It is not a toy.
- Never keep gasoline near a source of ignition. Always use an approved container. Keep gasoline away from children.
- Lubricate according to the Instruction Book. See "Lubrication".

IMPORTANT--Read the Instruction Book. Keep this book for future use and reference.

ASSEMBLY

All fasteners are in the parts bag. Do not discard any parts or material until the unit is assembled.



WARNING: Before doing any assembly or maintenance to the mower, remove the wire from the spark plug.

NOTE: In this instruction book, left and right describe the location of a part with the operator on the seat.

NOTE: Illustrations and pictorials begin on page 2.

NOTE: To assemble the following loose parts, use the fasteners shown at full size in Figure 23.

How To Install The Front Wheels (Figure 1)

Use a knife and cut the four sides of the container. Install the front wheels (1) in the container.

NOTE: Use a piece of wood about 4 feet (1.25 meters) long to raise the front of the tractor. If a piece of wood cannot be found, get another person to help lift the tractor. Be careful, do not let the tractor fall.

1. Raise the front of the tractor. Set a support (block of wood) under the tractor.
2. Make sure the valve stem (2) is to the outside of the tractor. Slide the front wheel (1) on the spindle (3).
3. Fasten each front wheel (1) with washer (4) and cotter pin (5). Bend the ends of the cotter pin (5) apart to keep the front wheel (1) on the spindle (3).
4. After the front wheels (1) are installed, lift the tractor from the support. Roll the tractor off of the container.
5. If your tractor has hub caps (6), install the hub caps (6). Make sure the washers (4) hold the hub caps (6) in place.

Check The Tyres

Check the air pressure in the tyres. Tyres with too much air pressure will cause the unit to ride rough. Also, the wrong air pressure will keep the mower housing from cutting level. The correct air pressure is: Front Tyres 0.97 BAR (14 PSI), Rear Tyres 0.69 BAR (10 PSI). The tyres were over inflated for shipment.

Check The Level Of The Mower Housing

Make sure the level of cut is still correct. After you mow a short distance, look at the area that was cut. If the mower housing does not cut level, see the instructions on "How To Level The Mower Housing" in the Maintenance section of this instruction book.

How To Install The Seat (Figure 2)

1. Carefully remove the plastic bag from the seat (1).
2. Align the holes in the seat hinge (2) to the holes in the seat (1). Fasten the seat (1) to the seat hinge (2) with the fasteners (4) and (5).
3. Check the operating position of the seat (1). If the seat (1) needs to be adjusted, loosen the two wing bolts (5). Slide the seat (1) forward or backward along the seat adjusting holes (3). Tighten the wing bolts (5).

How To Assemble The Steering Wheel (Figure 3)

1. Make sure the front wheels point forward.
2. Slide the cover (3) over the steering post (2). Make sure the collar of the cover (3) is on top.
3. Slide the steering wheel (1) onto the steering post (2).
4. Attach the steering wheel (1) to the steering post (2) with screw (4) and washer (6).
5. Some models have an optional insert (7) in the parts bag. Attach the insert (7) to the center of the steering wheel (1).

Maintenance Free Battery (Figure 4)

IMPORTANT: Before you attach the battery cables to the battery, check the battery date. The battery date tells if the battery must be charged.

1. Check the top of the battery (1) for the location of the battery date.
2. If the battery (1) is put into service before the , the battery cables can be attached without charging the battery (1). See "How To Install The Battery Cables".
3. If the battery (1) is put into service after the , the battery (1) must be charged. See "How To Charge The Maintenance Free Battery".

How To Charge The Battery (Figure 4)



WARNING: When you charge the battery, do not smoke. Keep the battery away from any sparks. The fumes from the battery acid can cause an explosion.

1. Remove the battery (1) and battery tray (3).

2. Remove the protective caps from the battery terminals.
3. Use a 12 volt battery charger to charge the battery (1). Charge at a rate of 6 amperes for one hour. If you do not have a battery charger, have an authorized service centre charge the battery.
4. Install the battery (1) and battery tray (3). Make sure the positive (+) terminal (4) is on the left side.

How To Install The Battery Cables (Figure 4)



WARNING: To prevent sparks, fasten the red cable to the positive (+) terminal before you connect the black cable.

1. Remove the protective caps from the battery terminals.
2. Slide the terminal cover (2) onto the red cable (5). Fasten the red cable (5) to the positive (+) terminal (4) with the fasteners (6) and (7).
3. Fasten the black cable (8) to the negative (-) terminal with the fasteners (6) and (7).

How To Prepare The Engine

NOTE: The engine was shipped from the factory filled with oil. Check the level of the oil. Add oil as needed.

See the engine manufacturer's instructions for the type of petrol and oil to use. Before you use the unit, read the information on safety, operation, maintenance, and storage.



WARNING: Follow the engine manufacturer's instructions for the type of petrol and oil to use. Always use a safety petrol container. Do not smoke when adding petrol to the engine. When inside an enclosure, do not fill with petrol. Before you add petrol, stop the engine. Let the engine cool for several minutes.

Important! Before You Start Mowing

- Check the engine oil.
- Fill the fuel tank with petrol.
- Check the level of the mower housing.
- Check the air pressure of the tyres.
- Attach the battery cables.

OPERATION

NOTE: Illustrations and pictorials begin on page 2.

Location Of Controls (Figure 5)

Blade Rotation Control (1): Use the blade rotation control to start and stop the rotation of the blade.

Clutch / Brake Pedal (2): The pedal has two functions. The first function is a clutch. The second function is a brake.

Headlight Switch (3): The headlight switch is the first part of the ignition switch. To use the lights with the engine running, turn the key to the position for the lights.

Ignition Switch (3): Use the ignition switch to start and stop the engine.

Shift Lever (4): Use the shift lever to change the speed of the unit.

Lift Lever (5): Use the lift lever to change the height of cut.

Parking Brake Lever (6): Use the parking brake lever to engage the brake when you leave the unit.

Throttle Control Lever (7): Use the throttle control lever to increase or decrease the speed of the engine.

Attachments

This unit can use many different attachments. This unit can pull attachments like a lawn sweeper, a lawn aerator, or a hopper spreader. This unit can not use attachments that engage the ground like a plough, a disk harrow, or a cultivator.

For trailer and pull-behind attachments, the maximum weight is 113 kg (250 lbs.).

How To Use The Throttle Control (Figure 5)

Use the **throttle control (7)** to increase or decrease the speed of the engine.

1. The FAST position is marked with a detent. For normal operation and when using a grass bagger, move the throttle control to the FAST position. For maximum charging of the battery and for a cooler running engine, operate the engine in the FAST position.
2. The engine governor is set at the factory for maximum performance. Do not adjust the governor to increase the speed of the engine.

How To Use The Blade Rotation Control (Figure 5)

Use the **blade rotation control (1)** to engage the blade(s).

1. Before you start the engine, make sure the **blade rotation control (1)** is in the DISENGAGE position.
2. Move the **blade rotation control (1)** to the ENGAGE position to rotate the blade(s).

NOTE: If the engine stops when you engage the blade(s), the seat switch is not activated. Make sure you sit in the middle of the seat.

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3. Move the **blade rotation control (1)** to the DISENGAGE position to stop the blade(s). Before you leave the operator's position, make sure the blade(s) has stopped rotating.
4. Before you ride the unit across a sidewalk or a road, move the **blade rotation control (1)** to the DISENGAGE position.



WARNING: Always keep your hands and feet away from the blade, deflector opening, and the mower housing when the engine runs.

How To Use The Shift Lever (Figure 5)

To change the forward speed or the direction of the unit, follow the steps below.

CAUTION: Before you move the shift lever, completely push the clutch/brake pedal forward to stop the unit. If the unit is not stopped, the gearbox can be damaged.

1. Completely push the **clutch/brake pedal (2)** forward to stop the unit. Keep your foot on the pedal.
2. Move the **throttle control lever (7)** to the SLOW position.
3. To go forward, move the **shift lever (4)** to a forward speed setting. To go backward, move the **shift lever (4)** to reverse.
4. Slowly release the **clutch/brake pedal (2)**. Do not keep your foot on the pedal.
5. Move the **throttle control (7)** to the FAST position.

How To Use The Parking Brake (Figure 5)

1. Completely push the **clutch/brake pedal (2)** forward.
2. Lift the **parking brake lever (6)**.
3. Remove your foot from the **clutch/brake pedal (2)** and then release the **parking brake lever (6)**. Make sure the parking brake will hold the unit.
4. To release the **parking brake (6)**, completely push the **clutch/brake pedal (2)** forward. The parking brake will automatically release.



WARNING: Before you leave the operator's position, move the shift lever to the neutral (N) position. Set the parking brake. Move the blade rotation control to the DISENGAGE position. Stop the engine and remove the ignition key.

How To Change The Cutting Height (Figure 5)

To change the cutting height, raise or lower the **lift lever (5)** as follows.

1. Move the **lift lever (5)** forward to lower the mower housing and back to raise the mower housing.
2. When you ride on a sidewalk or road, move the **lift lever (5)** to the highest position and move the **blade rotation control** to the DISENGAGE position.

How To Stop The Unit (Figure 5)

1. Completely push the **clutch/brake pedal (2)** forward to stop the unit. Keep your foot on the pedal.

2. Move the **blade rotation control (1)** to the DISENGAGE position.
3. Move the **shift lever (4)** to the NEUTRAL position.

4. Set the **parking brake (6)**.



WARNING: Make sure the parking brake will hold the unit.

5. Move the **throttle control (7)** to the SLOW position.
6. To stop the engine, turn the **ignition key (3)** to the OFF position. Remove the key.

How To Transport The Unit

To transport the unit, follow the steps below.

1. Move the blade rotation control to the DISENGAGE position.
2. Raise the lift lever to the highest position.
3. Move the throttle control to a position between SLOW and FAST.
4. To go faster, move the shift lever to a faster speed.

How To Operate With The Mower Housing

IMPORTANT: When you operate with the mower housing, always operate with the throttle control in the FAST position.

1. Start the engine.
2. Move the lift lever to a height of cut position. In high or thick grass, cut the grass in the highest position first and then lower the mower housing to a lower position.
3. Move the throttle control to the SLOW position.
4. Slowly move the blade rotation control to the ENGAGE position.
5. Push the clutch/brake pedal completely forward.
6. Move the shift lever to one of the speed settings.

NOTE: When you mow in heavy grass or mow with a bagger, put the shift lever in the slowest speed.



WARNING: For better control of the unit, select a safe speed.

How To Operate On Hills



WARNING: Do not ride up or down slopes that are too steep to back straight up. Never ride the unit across a slope.

1. Before you ride up or down a hill, move the shift lever to the slowest speed.
2. Do not stop or change speed settings on a hill. If you must stop, quickly push the clutch/brake pedal forward and set the parking brake.

- To start again, make sure the shift lever is in the slowest speed. Move the throttle control to the SLOW position. Slowly release the pedal.
- If you must stop or start on a hill, always have enough space for the unit to roll when you release the brake and engage the clutch.
- Be very careful when you change directions on a hill. When on a slope or in a turn on a hill, move the throttle control to the SLOW position to help prevent an accident.

Before Starting The Engine

Check the oil

NOTE: The engine was shipped from the factory filled with oil. Check the level of the oil. Add oil as needed. See the engine manufacturer's instructions for the type of petrol and oil to use.

- Make sure the unit is level.

NOTE: Do not check the level of the oil while the engine runs.

- Check the oil. Follow the procedure in the engine manufacturer's instructions.
- If necessary, add oil until the oil reaches the FULL mark on the dipstick. The quantity of oil needed from ADD to FULL is shown on the dipstick. Do not add too much oil.

Add Petrol



WARNING: Always use a safety petrol container. Do not smoke when adding petrol to the fuel tank. Do not add petrol when you are inside an enclosure. Before you add petrol, stop the engine and let the engine cool for several minutes.

(Figure 6) Fill the fuel tank (1) to the FULL (2) position with regular unleaded petrol. Do not use premium unleaded petrol. Make sure the petrol is fresh and clean. Leaded petrol will increase deposits and shorten the life of the valves.

How To Start The Engine



WARNING: The electrical system has an operator presence system that includes a sensor switch for the seat. These components tell the electrical system if the operator is sitting on the seat. This system will stop the engine when the operator leaves the seat if the blade rotation control is engaged or if the transmission is engaged. For your protection, always make sure this system operates correctly.

NOTE: The engine will not start unless you depress the clutch/brake pedal or engage the parking brake and move the blade rotation control to the DISENGAGE position.

- Push the brake pedal completely forward. Keep your foot on the pedal.
- Move the shift lever to the neutral (N) position.
- Make sure the blade rotation control is in the DISENGAGE position.

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- Move the throttle control completely forward to the CHOKE or FAST position. Some models have a separate choke knob. Pull the choke knob to the full CHOKE position.
- Turn the ignition key to the START position.

NOTE: If the engine does not start after four or five tries, move the throttle control to the FAST position. Again try to start the engine. If the engine will not start, see the TROUBLE SHOOTING CHART.

- Slowly move the throttle control to the SLOW position.
- To start a hot engine, move the throttle control to a position between FAST and SLOW.

Mowing And Bagging Tips

- For a lawn to look better, check the cutting level of the mower housing. See "How To Level The Mower Housing" in the Maintenance section.
- For the mower housing to cut level, make sure the tyres have the correct amount of air pressure.
- Every time you use the unit, check the blade. If the blade is bent or damaged, immediately replace the blade. Also, make sure the nut for the blade is tight.
- Keep the blade(s) sharpened. Worn blades will cause the ends of the grass to turn brown.
- Do not cut or bag grass that is wet. Wet grass will not discharge correctly. Let the grass dry before cutting.
- Use the left side of the mower housing to trim near an object.
- Discharge the cut grass onto the mowed area. The result is a more even discharge of cut grass.
- When you mow large areas, start by turning to the right so that the cut grass will discharge away from shrubs, fences, driveways, etc. After one or two rounds, mow in the opposite direction making left turns until finished.
- If the grass is very high, cut two times to decrease the load on the engine. First cut with the mower housing in the highest position and then lower the mower housing for the second cut.
- For better engine performance and an even discharge of the cut grass, always operate the engine with the throttle in FAST position.
- When you use a bagger, operate the engine with the throttle in FAST position and the shift lever in first or second gear.
- For better cutting performance and a quality cut, mow with the shift lever in one of the slower speeds.
- After each use, clean the bottom and top of the mower housing for better performance. Also, a clean mower housing will help prevent a fire.

MAINTENANCE

NOTE: Illustrations and pictorials begin on page 2.

General Recommendations

- The owner's responsibility is to maintain this product. This will extend the life of the product and is also necessary to maintain warranty coverage.
- Check the spark plug, drive brake, lubricate the unit, and clean the air filter once a year.
- Check the fasteners. Make sure all fasteners are tight.
- Follow the Maintenance section to keep the unit in good operating condition.



WARNING: Before you make an inspection, adjustment, or repair to the unit, disconnect the wire to the spark plug. Remove the wire from the spark plug to prevent the engine from starting by accident.

NOTE: Torque is measured in foot pounds (metric Nm). This measurement describes how tight a nut or bolt must be. The torque is measured with a torque wrench.

Inspect Blade (Figure 7)



WARNING: Before you inspect or remove the blade, disconnect the wire to the spark plug. If the blade hits an object, stop the engine. Check the unit for damage. The blade has sharp edges. When you hold the blade, use gloves or cloth material to protect your hands.

If you keep the blade (1) sharp and inspect the blade for damage, the blade will cut better and be more safe to operate. Frequently check the blade for excessive wear, cracks, or other damage. Frequently check the nut (3) that holds the blade (1). Keep the nut (3) tight. If the blade hits an object, stop the engine. Disconnect the wire to the spark plug. See if the blade is bent or damaged. Check the blade adapter (5) for damage. Before you operate the unit, replace damaged parts with original equipment parts. See the authorized service centre in your area. Every three years, have an authorized service person inspect the blade or replace the old blade with an original equipment part.

How To Remove And Install The Blade (Figure 7)

- Remove the mower housing. See the instructions on "How To Remove The Mower Housing".
- Use a piece of wood to keep the blade from rotating.
- Remove the nut (3) that holds the blade (1).
- Check the blade (1) and the blade adapter (5) according to the instructions for "Inspect Blade". Replace a badly worn or damaged blade with an original equipment blade. See an authorized service centre in your area.
- Clean the top and bottom of the mower housing. Remove all the grass and debris.
- Mount the blade (1) and blade adapter (5) on the mandrel (6).
- Mount the blade (1) so that the hi-lift edges (7) are up. If the blade is upside down, the blade will not cut correctly and can cause an accident.
- Fasten the blade (1) with the original washers and nut (3). Make sure the outside rim of the Belleville washer (2) is against the blade (1).



WARNING: Always keep the nut (3) tight that holds the blade (1). A loose nut or blade can cause an accident.

9. Tighten the **nut (3)** that holds the **blade (1)** to a torque of 30 foot pounds (41,5 Nm).
10. Install the mower housing. See "How To Remove The Mower Housing".

How To Adjust The Blade Rotation Control



WARNING: To prevent an injury, the blade rotation control must operate correctly.

In normal usage, the blade rotation control will not require an adjustment. However, if the cutting performance decreases or the quality of cut is poor, make the following changes.

1. When you mow, make sure the throttle control is in the FAST position.
2. (**Figure 8**) Move the blade rotation control to the **DISENGAGE position (1)**.
3. Stop the engine. Disconnect the wire from the spark plug.
4. Check the blade(s). Keep a sharp edge on the blade(s). A blade that is not sharp will cause the tips of the grass to become brown.
5. (**Figure 9**) Disconnect the **blade drive spring (2)** from the **blade control rod (1)**. Move the **blade drive spring (2)** to the **middle hole (4)**. This will increase the tension on the mower drive belt.
6. Attach the wire to the spark plug. Mow for a short distance and again check the quality of cut. If necessary, move the **blade drive spring (2)** to the **bottom hole (5)**.
7. Again check the quality of cut. If the quality of cut has not improved, replace the mower drive belt. See "How To Replace The Mower Drive Belt". If the replacing the belt does not correct the problem, take the unit to an authorized service centre.
8. Move the blade rotation control to the **DIS-ENGAGE position**. Stop the engine.
9. (**Figure 10**) Check the operation of the blade brake. Rotate the pulleys with your hand. Make sure the **brake pads (7)** are pressed tightly against the pulleys



WARNING: If the brake pads (7) do not press tightly against the pulleys, take the unit to an authorized service centre.

10. (**Figure 8**) Move the blade rotation control to the **ENGAGE position (2)**.
11. (**Figure 10**) Check the pads for the **blade brake (7)**. If the pads are excessively worn or damaged, replace the brake pad assemblies. Correct replacement parts and assistance are available from an authorized service centre.
12. Attach the wire to the spark plug. Mow for a short distance and again check the operation of the blade rotation control.

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13. When you move the blade rotation control to the **DISENGAGE position**, all movement will stop within five seconds. If there is movement of the belt or the blades continue to rotate, engage and disengage the blade rotation control five times to remove any excess rubber from a new mower drive belt. If you need assistance, take the unit to an authorized service centre.
14. (**Figure 9**) If you replace the mower drive belt, move the **blade drive spring (2)** to the **top hole (3)**.

How To Adjust The Shift Lever (Figure 18)

If the **NEUTRAL** position on the shift lever does not match neutral on the gearbox, adjust the shift lever as follows.

1. Stop the engine.
2. Disconnect the **adjuster nut (2)** from the **shifter bracket (3)**.
3. Make sure the shift lever is in the **NEUTRAL position**.
4. Push the unit forward. Make sure the gearbox is in neutral.
5. To align the **adjuster nut (2)** with the hole in the **shifter bracket (3)**, turn the **adjuster nut (2)**.
6. Connect the **adjuster nut (2)** to the **shifter bracket (3)**.
7. Make sure the **NEUTRAL** position on the shift lever matches neutral on the gearbox.

How To Check And Adjust The Clutch (Figure 11)

If the motion drive belt is loose, the clutch will slip when; going up a hill, pulling a heavy load, or the unit will not move forward. Adjust the clutch as follows.



WARNING: Before you make an inspection, adjustment, or repair to the unit, disconnect the wire to the spark plug. Remove the wire from the spark plug to prevent the engine from starting by accident.

1. Check the routing of the motion drive belt. Make sure the belt is installed correctly and is inside all the belt guides.
2. Remove the **cotter pin (1)**, **washer (2)**, and **brake spring (3)** from the **adjustable nut (4)**.
3. Disconnect the **adjustable nut (4)** from the **brake lever assembly (5)** and the **parking brake latch (6)**.
4. Align the hole in the **brake lever (5)** with the hole in the **frame**. Hold the **brake lever (5)** in place with a 6 mm **pin or bolt (7)**.
5. Pull the clutch rod forward until tight. Turn the **adjustable nut (4)** until the nut will fit through the hole in the **brake lever (5)**.
6. Assemble the **adjustable nut (4)** to the **parking brake latch (6)**, **brake lever (5)** and **brake spring (3)**. Fasten with the **washer (2)** and **cotter pin (1)**.
7. Remove the 6 mm **pin or bolt (7)**.
8. If the belt still slips after the clutch has been adjusted, then the motion drive belt is worn or damaged and must be replaced. See "How To Replace The Motion Drive Belt".

How To Check And Adjust The Drive Brake (Figure 12)

Completely push the clutch/brake pedal forward. Set the parking brake. Move the shift lever to the neutral (N) position. Push the unit. If the rear wheels rotate, adjust or replace the brake pads. Adjust the **drive brake (1)** as follows.

1. The location of the **drive brake (1)** is on the right side of the **gearbox (3)**.
2. Make sure the parking brake is set and the shift lever is in neutral (N). Turn the **hex nut (2)** in a clockwise direction until the rear wheels do not turn when the unit is pushed forward.
3. Release the parking brake and push the unit. If the unit does not roll, turn the **hex nut (2)** in a counter-clockwise direction until the unit rolls.
4. Set the parking brake. Push the unit. If the rear wheels do not turn, the **drive brake (1)** is correctly adjusted. Release the parking brake.



WARNING: If you cannot correctly adjust the drive brake, replace the brake pads. Correct replacement parts and assistance are available from an authorized service centre.

How To Remove The Battery (Figure 4)

To charge or clean the **battery (1)**, remove the **battery (1)** from the unit as follows.



WARNING: To prevent sparks, disconnect the black battery cable (8) from the negative (-) terminal before you disconnect the red cable (5).



WARNING: The battery contains sulphuric acid which is harmful to the skin, eyes and clothing. If the acid gets on the body or clothing, wash with water.

1. Disconnect the **black cable (8)** from the negative (-) terminal.
2. Disconnect the **red cable (5)** from the **positive (+) terminal (4)**.
3. Lift the **battery tray (3)** and the **battery (1)** out of the unit.

How To Charge The Battery (Figure 4)



WARNING: When you charge the battery, do not smoke. Keep the battery away from any sparks. The fumes from the battery acid can cause an explosion.

1. Before you charge the **battery (1)**, remove the **battery (1)**.
 2. To charge the **battery (1)**, use a 12 volt battery charger. Charge at a rate of 6 amperes for 1 hour.
 3. Install the **battery (1)**.
- WARNING: To prevent sparks, fasten the red cable to the positive (+) terminal before you connect the black cable.**
4. Fasten the **red cable (5)** to the **positive (+) terminal (4)** with the fasteners as shown.
 5. Fasten the **black cable (8)** to the **negative (-) terminal** with the fasteners as shown.

How To Level The Mower Housing (Figure 13 and Figure 14)

If the mower housing is level, the blade will cut easier and the lawn will look better.



WARNING: Before you make an inspection, adjustment, or repair to the unit, disconnect the wire to the spark plug. Remove the spark plug wire to prevent the engine from starting by accident

1. Make sure the unit is on a hard flat surface.
2. Check the air pressure in the tyres. If the air pressure is incorrect, the mower housing will not cut level. Make sure the tyres are inflated to: Front Tyres 0.97 BAR (14 PSI) , Rear Tyres 0.69 BAR (10 PSI) .

3. (Figure 13) Move the lift lever (1) to the lowest cut position (2).



WARNING: The lifter lever (3) is spring loaded. Make sure the lift lever (3) is locked in the lowest cut position (2).

4. (Figure 14) Loosen the left and right adjuster knobs (1). Push down on each side of the mower housing. Make sure both sides of the mower housing are setting on a flat surface. Also, make sure the lift links are loose and can easily move up or down.
5. Push down on the lift links (2) and tighten the left and right adjuster knobs (1). Make sure the adjuster knobs (1) are tight. If necessary, use a wrench to tighten the adjuster knobs (1).
6. (Figure 13) Raise the lift lever (1).
7. Mow for a short distance. If the height of cut is not level, repeat the above steps.

Where To Lubricate (Figure 15)



Models with grease fittings:
Lubricate with grease gun.
Apply grease with a brush to the areas shown.
Lubricate the areas shown with engine oil.

NOTE: Apply grease to the steering gear assembly.

CAUTION: If the unit is operated in dry areas that have sand, use a dry graphite spray to lubricate the unit.

Check The Tyres

Check the air pressure in the tyres. Tyres with too much air pressure will cause the unit to ride rough. Also, the wrong air pressure will keep the mower housing from cutting level. The correct air pressure is: Front Tyres 0.97 BAR (14 PSI) , Rear Tyres 0.69 BAR (10 PSI) .

How To Replace The Motion Drive Belt

1. Remove the mower housing. See the instructions on "How To Remove The Mower Housing".
2. Completely push the pedal forward and engage the parking brake.

3. (Figure 16) Remove the idler pulley (1).
4. (Figure 17) To access the belt guides (1), remove the battery and battery tray. See "How To Remove The Battery".
5. Loosen the belt guides (1) at the drive pulley (2).
6. (Figure 16) Remove the motion drive belt (3) from the drive pulley (4).
7. (Figure 18) Remove the adjuster nut (2) from the shifter bracket (3). Pull the motion drive belt over the shifter bracket (3).
8. (Figure 19) To remove the motion drive belt (1) from the stack pulley (2), pull the front end of the belt under the stack pulley (2) and then back between the stack pulley and the steering plate (3).
9. (Figure 20) Remove the access panel (1).
10. Remove the two screws (4) that attach the steering shaft assembly (2). Raise the steering wheel and steering shaft assembly (2). Pull the motion drive belt (3) under the steering shaft assembly (2).
11. Remove the motion drive belt. A correct replacement part or assistance is available from an Authorized Service Centre in your area.
12. To install the motion drive belt, reverse the above steps.
13. (Figure 21) Check the routing of the motion drive belt (1). Make sure the motion drive belt is installed correctly on the idler pulley (2). Make sure the steering shaft assembly (3) is inside the motion drive belt (1).

How To Replace The Mower Drive Belt (Figure 10)

1. Remove the mower housing. See the instructions on "How To Remove The Mower Housing".
2. Pull the belt retainer (1) away from the idler pulley (2) and remove the mower drive belt (3).
3. Pull the belt retainer (4) away from the right mandrel pulley (5) and remove the mower drive belt (3).
4. Pull the belt retainer (4) away from the left mandrel pulley (6) and remove the mower drive belt (3). A correct replacement part or assistance is available from an Authorized Service Centre in your area.
5. To install the mower drive belt, reverse the above steps.

How To Remove The Mower Housing (Figure 22)

1. Move the blade rotation control (1) to the DISENGAGE position.
2. Move the lift lever (2) to the level adjustment position.
3. Remove the hair pins and the washers from the adjuster arms (3). See illustrations "C" and "D".

4. Remove the hair pins and washers from the suspension links (4). See illustrations "A" and "B".
5. Disconnect the extension spring (5) from the blade control rod (6). See illustration "E".
6. Disconnect the front hanger (9) from the axle support. See illustration "F".
7. Remove the mower drive belt (7) from the stack pulley (8).
8. Pull the mower housing away from the right side of the unit.
9. To install the mower housing, reverse the above steps.

How To Replace The Fuse

If the fuse is blown, the engine will not start. Remove the fuse and replace with a 15 amp. automotive fuse.

Storage (over 30 days)

At the end of each year, prepare the unit for storage as follows.

1. Drain the fuel from the carburettor and the fuel tank. Change the engine oil. See the engine manufacturer's instructions.
2. Clean the entire unit.
3. Charge the battery.

How To Order Replacement Parts

The replacement parts are shown either on the back pages of this Instruction Book or in a separate Parts List Book.

Use only manufacturer's authorized or approved replacement parts. The letter placed on the end of the part number denotes the type of finish for the part, C for chrome, Z for zinc, a PA for purchased assembly. It is important that you include this when ordering a part. Do not use attachments or accessories not specifically recommended for this unit. In order to obtain proper replacement parts you must supply the model number of your mower (see nameplate).

Replacement parts, except for the engine, transmission, transaxle or differential, are available from the store where the mower was purchased or a service shop recommended by the store.

If you are unable to obtain parts or service in the manner outlined above, then contact: Murray, Inc., International Sales, PO Box 268, Brentwood, TN 37024, USA. Fax (615) 373-6633.

Replacement parts for the engine, transaxle, or transmission, are available from the manufacturer's authorized service centre found in the commercial pages of the telephone directory. Also, see the individual engine or transmission warranties to order replacement parts.

When ordering the following information is required:

- (1) The Model Number
- (2) Serial Number
- (3) Part Number
- (4) Quantity

TROUBLE SHOOTING CHART

PROBLEM: The engine will not start.

1. Follow the steps, "How To Start The Engine" in this book.
2. Electric-Start Models: Clean the battery terminals. Tighten the cables.
3. Check for a loose wire. Tighten the limit switches. (See the wiring diagram.)
4. Drain the fuel tank. Clean the fuel line. Replace the fuel filter.
5. Remove the spark plug(s). Move the throttle to the SLOW position. Turn the ignition key to the ON position. Try to start the engine several times. Install the spark plug.
6. Replace the spark plug.
7. Adjust the carburettor.

PROBLEM: The engine will not turn over.

1. Follow the steps, "How To Start The Engine" in this book.
2. Electric-Start Models: Charge the battery.
3. Replace the fuse.
4. Check the wiring harness for damage or a loose connection. Repair the damaged wire.
5. Electric-Start Models: replace the solenoid. Recoil-Start Models: replace the module.

PROBLEM: The engine is difficult to start.

1. Adjust the carburettor.
2. Replace the spark plug.
3. Replace the fuel filter.

PROBLEM: The engine does not run smooth or has a loss of power.

1. Check the oil.
2. Clean the air filter.
3. Clean the air screen.
4. Replace the spark plug.
5. The engine is working too hard. Use a lower gear.
6. Adjust the carburettor.
7. Replace the fuel filter.

PROBLEM: The engine does not run smooth at fast speed.

1. Replace the spark plug.

2. Adjust the throttle control.
3. Clean the air filter.
4. Replace the fuel filter.

PROBLEM: The engine stops when the blades are engaged.

1. Check the wiring harness for damage or a loose connection. Repair the damaged wire.
2. Grass bag must be installed (applies only to model with rear discharge grass bag).

PROBLEM: On slopes, the engine stops.

1. Mow up and down slopes. Never mow across a slope.

PROBLEM: The engine will not idle.

1. Replace the spark plug.
2. Clean the air filter.
3. Adjust the carburettor.
4. Adjust the throttle control.
5. Drain the fuel tank. Clean the fuel line. Replace the fuel filter.

PROBLEM: A hot engine causes a decrease in power.

1. Clean the air screen.
2. Check the oil.
3. Adjust the carburettor.
4. Replace the fuel filter.

PROBLEM: Excessive vibration.

1. Replace the blade.
2. Check for loose engine bolts.
3. Decrease the air pressure in the tyres.
4. Adjust the carburettor.
5. Check for a damaged belt or damaged pulley. Replace the damaged parts.

PROBLEM: The grass does not discharge correctly.

1. Stop the engine. Clean the mower housing.
2. Raise the height of cut.
3. Replace or sharpen the blade(s).
4. Move the shift lever to a slower speed.

5. Move the throttle control to the FAST position.
6. Replace the spring for the blade idler.
7. Clean the extension tube and the connector tube (applies only to model with rear discharge grass bag).

PROBLEM: The mower housing does not cut level.

1. Check the air pressure in the tyres.
2. Adjust the level of the mower housing.
3. Check the front axle. If the front axle does not freely pivot, loosen the axle bolt(s).

PROBLEM: The mower blades will not rotate.

1. Check the mower drive belt. Make sure the belt is installed correctly.
2. Replace the mower drive belt.

PROBLEM: The unit will not move when the brake is released and the speed control pedal is depressed.

1. Check the motion drive belt. Make sure the belt is installed correctly.
2. Adjust the clutch.
3. Replace the motion drive belt.
4. Release the Automatic Drive Disconnect under the seat.

PROBLEM: The unit moves slower or stops when the speed control pedal is depressed.

1. Adjust the clutch.
2. Replace the motion drive belt.

PROBLEM: When the brake pedal is released, belt noise can be heard.

1. Temporary belt noise does not change the operation of the unit. If belt noise is continuous, check the routing of the belt. Make sure the belt is inside all belt guides.
2. If the noise is continuous, adjust the clutch.

PROBLEM: The rear wheels spin over uneven terrain.

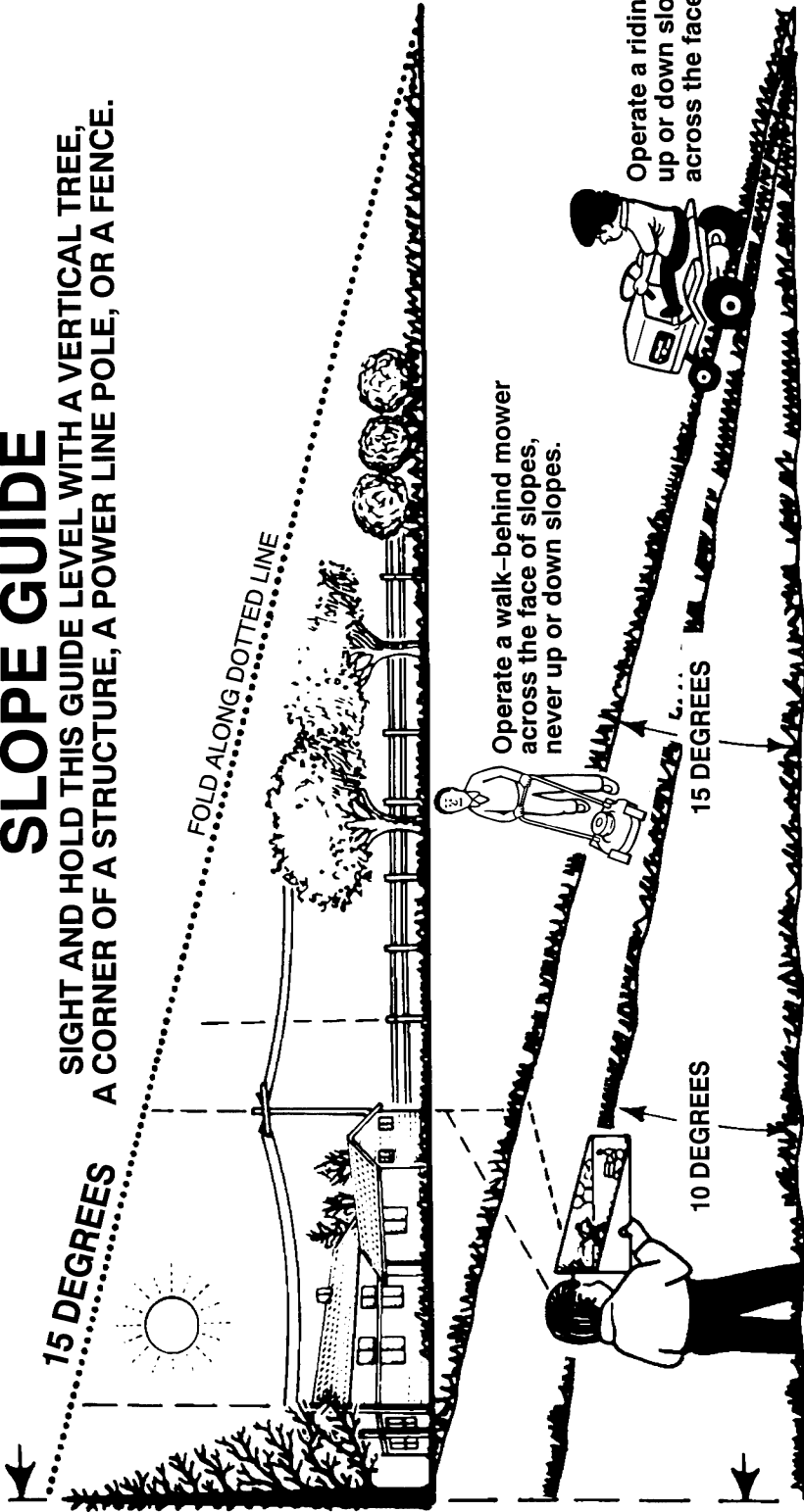
1. Check the front axle. If the front axle does not freely pivot, loosen the axle bolt(s).

SLOPE GUIDE

SIGHT AND HOLD THIS GUIDE LEVEL WITH A VERTICAL TREE, A CORNER OF A STRUCTURE, A POWER LINE POLE, OR A FENCE.

15 DEGREES

FOLD ALONG DOTTED LINE



Operate a riding mower up or down slopes, never across the face of slopes.

Operate a walk-behind mower across the face of slopes, never up or down slopes.

10 DEGREES

15 DEGREES

On a riding mower to determine if a slope is safe to mow: (1) disengage the blade(s), (2) put the unit in reverse, and (3) try to back straight up the slope. If you can back up the slope, it is generally safe to mow. However, if you do not feel safe, or if you are not completely sure, use this guide and do not mow a slope that is greater than 15 degrees. If the riding mower is used with a pull-behind or rear mounted attachment, do not operate the unit on a slope that is greater than 10 degrees.

A 15 degree slope is a hill that increases in height at approximately 2.5 feet in 10 feet.

A 10 degree slope is a hill that increases in height at approximately 1.7 feet in 10 feet.

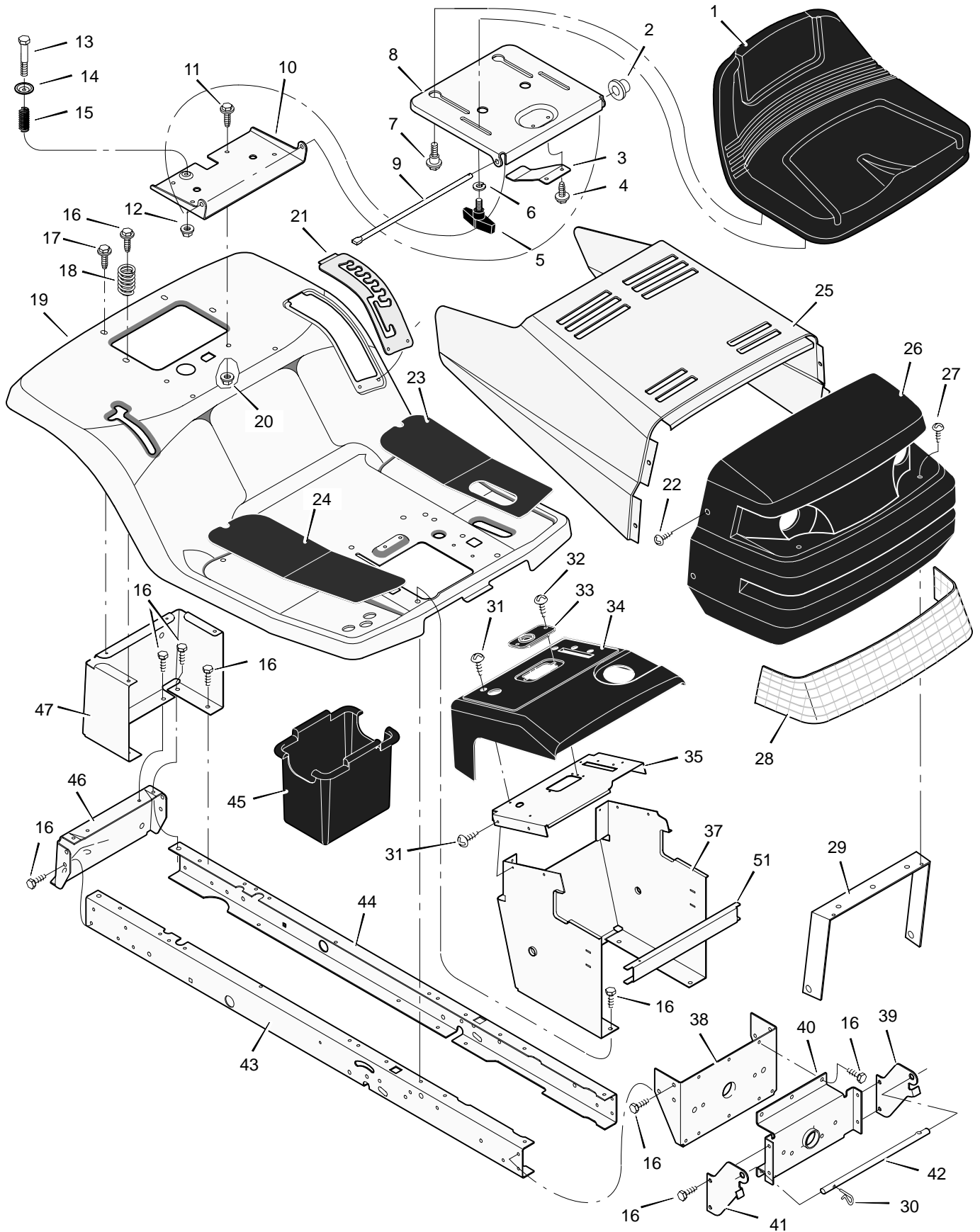


Use extreme care at all times, and avoid sudden turns or maneuvers. Follow other instructions in this manual for safety in mowing on slopes. Operate a riding mower up or down slopes, never across the face of slopes. Operate a walk-behind mower across the face of slopes, never up or down slopes. Use extra care when operating on or near slopes and obstructions.

..... CUT HERE TO USE SLOPE GUIDE

MODEL 405001x78B

REPAIR PARTS CHASSIS & HOOD



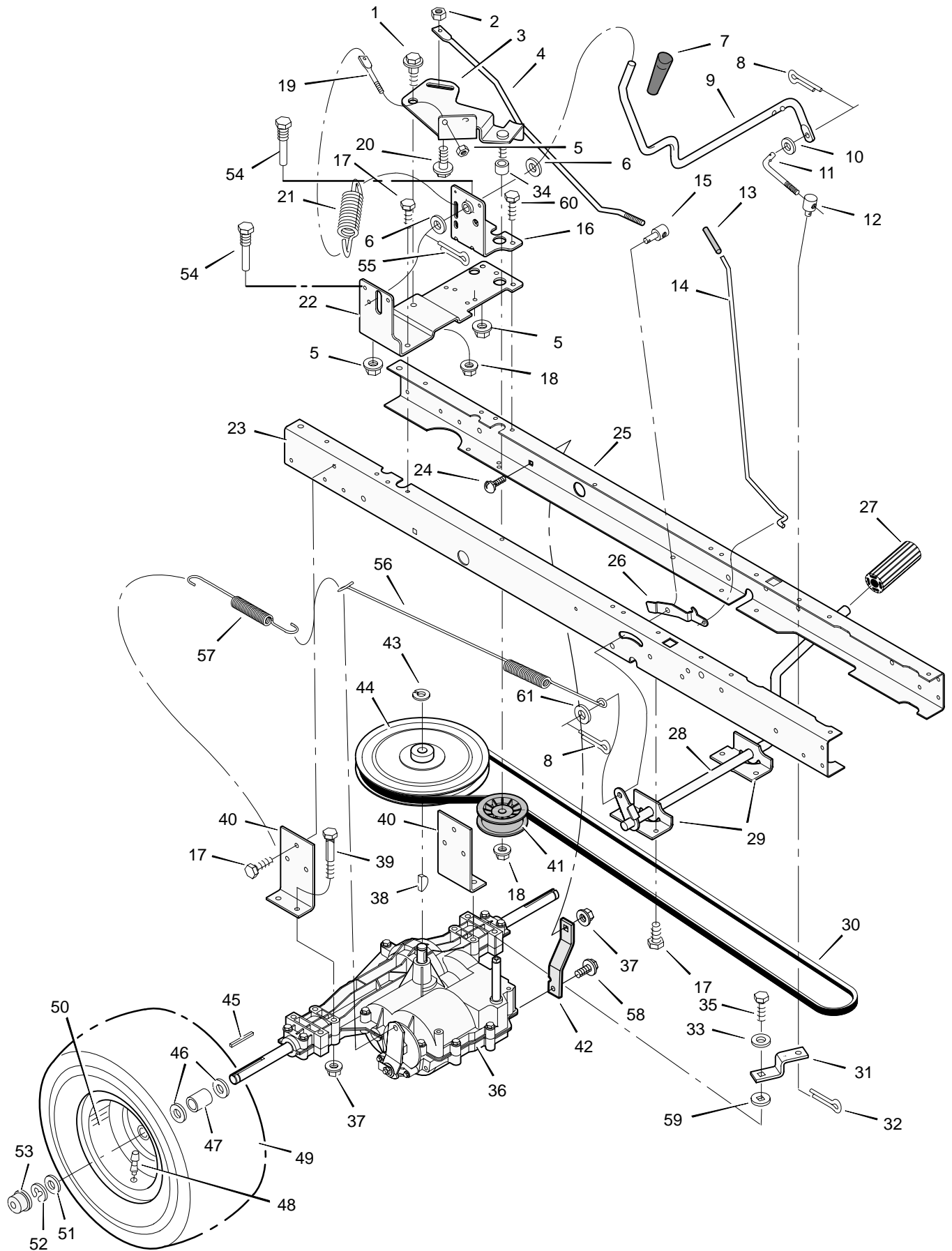
MODEL 405001x78B

REPAIR PARTS CHASSIS & HOOD

Key No.	Part No.	Description	Key No.	Part No.	Description
1	690567	Seat	26	094867E700	Grille Assembly (Includes Lens)
2	028x23	Cap, Push On	27	26x239	Screw
3	094057	Spring	28	092334	Lens
4	26x229	Screw	29	092448	Brace, Grille
5	1001054	Bolt, Wing	30	0031x4	Pin, Hair
6	017x47	Washer	31	26x270	Screw
7	009x56	Bolt, Shoulder	32	26x239	Screw
8	094154E700	Support, Seat	33	094214	Bearing, Steering
9	094156 Z	Rod, Pivot	34	095033E700	Dash
10	1001648E700	Bracket, Pivot	35	094211E700	Plate, Dash
11	001x45	Bolt	36	093007E700	Panel, Access
12	015x89	Nut	37	095323E700	Support, Dash
13	009x55	Bolt, Shoulder	38	094013E700	Bracket, Rear Hanger
14	094155 Z	Washer	39	690544E700	Support, Left Grille
15	164x31	Spring	40	094007E700	Axle, Hanger
16	26x249	Screw	41	690543E700	Support, Right Grille
17	26x263	Screw	42	092332 Z	Rod, Pivot
18	164x30	Spring	43	1001268E700	Frame, Right
19	095249E245	Deck, Seat	44	1001269E700	Frame, Left
20	015x88	Nut	45	690424	Container, Battery
21	094829E700	Plate, Index	46	1001002E700	Plate, Hitch
23	094999	Mat, Left	47	690434E700	Panel, Rear
24	094998	Mat, Right	51	094215E700	Channel
25	092333E245	Hood	--	F-030771L	Instruction Book & Parts List

MODEL 405001x78B

REPAIR PARTS MOTION DRIVE



MODEL 405001x78B

REPAIR PARTS MOTION DRIVE

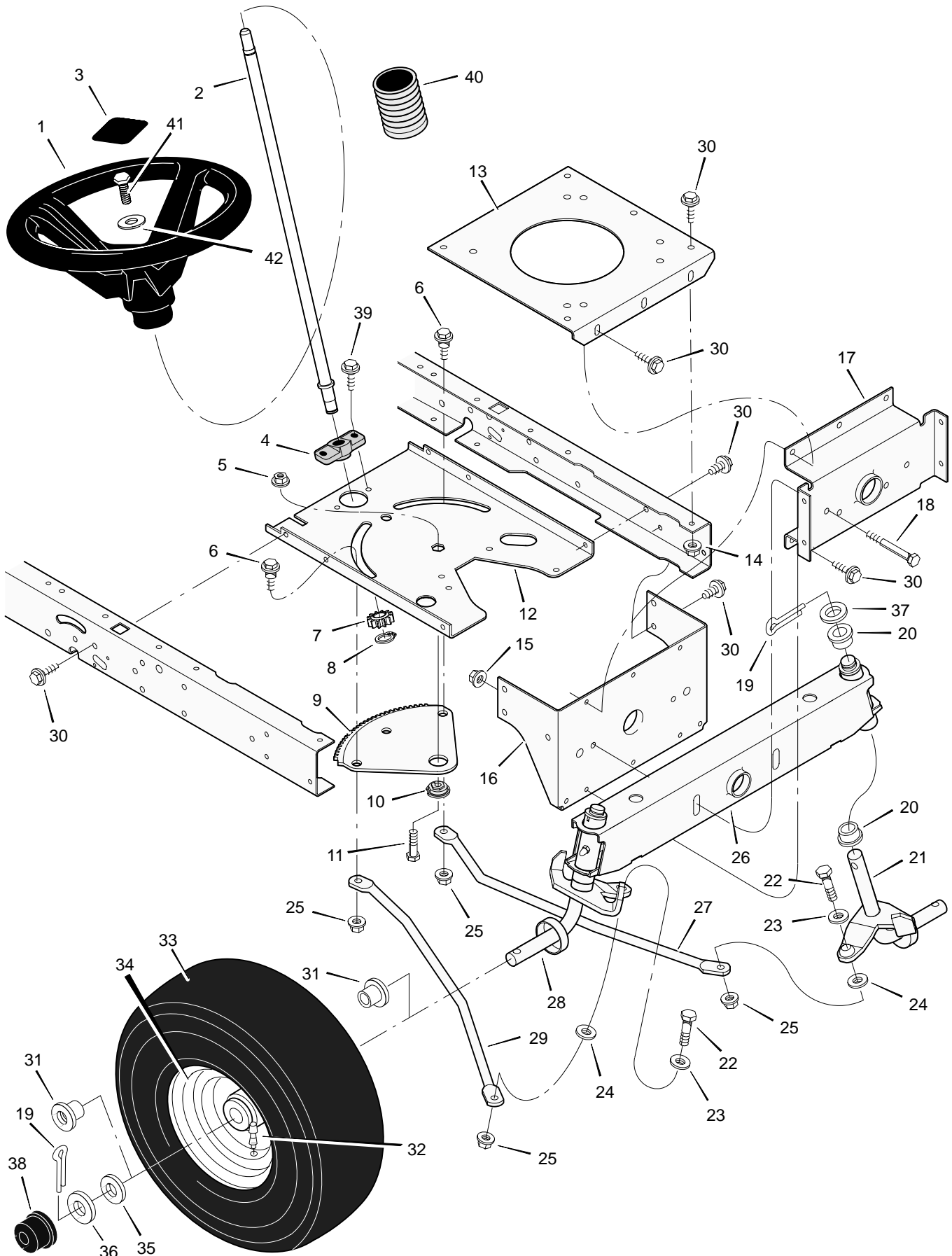
Key No.	Part No.	Description	Key No.	Part No.	Description
1	009x39	Bolt, Shoulder	32	0031x6	Pin, Hair
2	015x89	Nut, Hex	33	017x38	Washer
3	690173 Z	Arm, Idler	34	690369	Spacer
4	094041 Z	Rod, Clutch	35	06x105	Bolt
5	015x79	Nut	36	----	Transaxle **
6	17x102	Washer	37	015x88	Nut
7	092697	Grip	38	020697	Key, Woodruff
8	030x20	Pin, Cotter	39	01x155	Bolt
9	094043 Z	Lever, Shift	40	094008E700	Bracket, Transaxle
10	017x47 Z	Washer	41	690409	Pulley
11	094044 Z	Link, Shift	42	094433	Strap, Torque
12	021920	Nut, Adjuster	43	0011x7	E-Ring
13	091079	Grip	44	095094	Pulley, Drive
14	1001271 Z	Rod, Parking Brake	45	021553	Key, Square
15	094815	Nut, Adjuster	46	17x160	Washer
16	1001303 Z	Bracket, Shift Pivot	47	690554 Z	Spacer, Transaxle
17	26x249	Screw	48	024373	Stem, Valve
18	015x84	Nut	49	024375	Tire *
19	094042 Z	Mount, Stud Spring	--	407049	Tube
20	009x54	Bolt, Shoulder	50	092294-601	Wheel & Tire Assembly
21	165x116	Spring, Extension	51	17x195	Washer
22	1001302E700	Bracket, Right Shifter	52	0011x3	E-Ring
23	1001268E701	Frame, Right	53	094618	Hub Cap
24	002x53	Bolt, Carriage	54	093349	Guide, Belt
25	1001269E701	Frame, Left	55	0031x4	Pin, Hair
26	094045 Z	Latch, Parking Brake	56	165x115	Spring, Extension
27	021544	Pedal	57	165x92	Spring, Extension
28	094038E700	Lever, Brake/Clutch	58	26x216	Screw
29	1001117E700	Bracket, Pedal	59	17x148	Washer
30	037x87	Belt, Motion Drive	60	26x267	Screw
31	094031 Z	Yoke, Shift	61	17x169	Washer

* When you order a tire, make sure to give the brand name of the tire so that the tread pattern on the tire will match.

** For information on Replacement Parts see the Central Parts Distributor in your area.

MODEL 405001x78B

REPAIR PARTS STEERING



MODEL 405001x78B

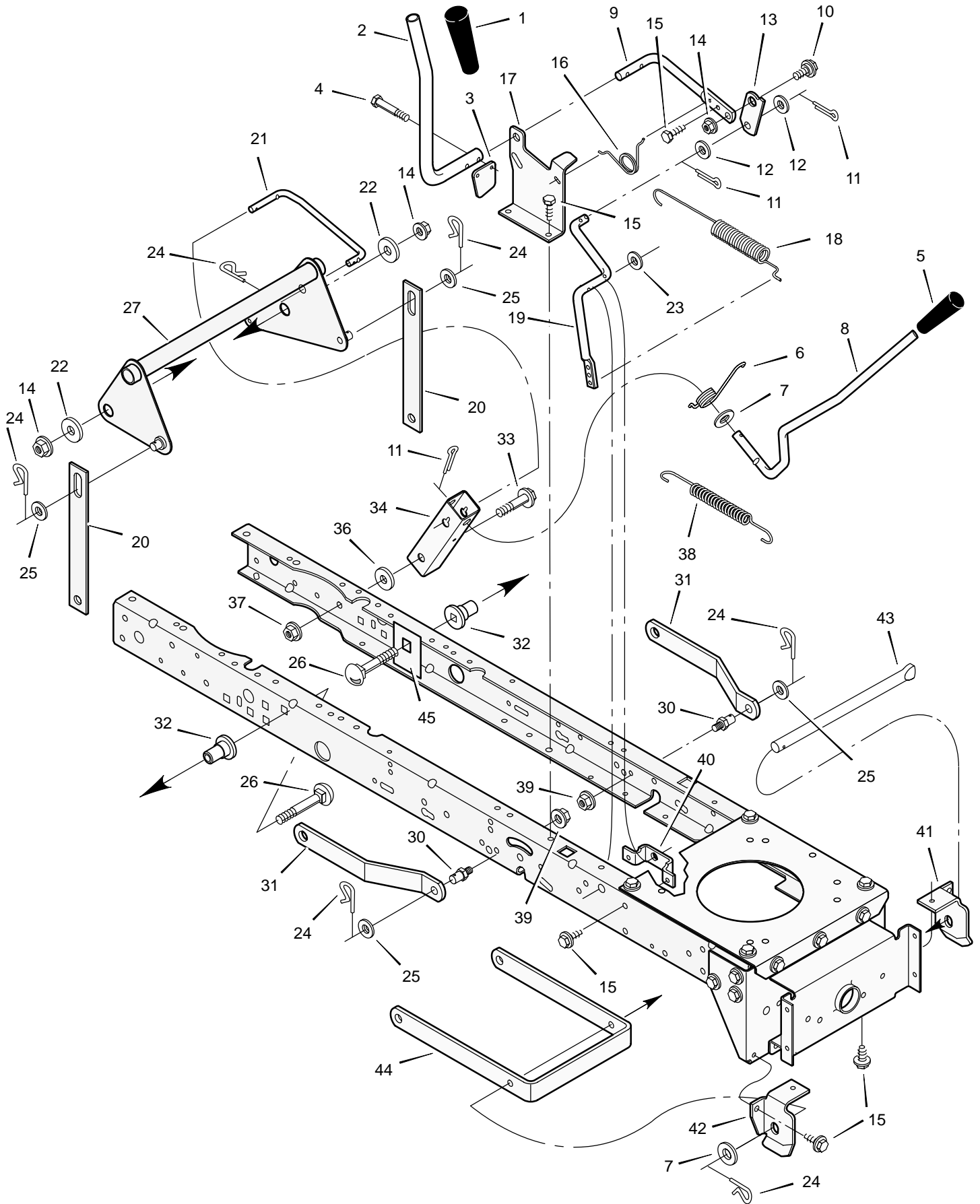
REPAIR PARTS STEERING

Key No.	Part No.	Description	Key No.	Part No.	Description
1	095184	Wheel, Steering	23	17x104	Washer
2	690626	Post, Steering	24	017x53 Z	Washer
3	711325	Insert, Steering Wheel	25	015x84	Nut, Flange
4	094124	Bearing	26	1001460E700	Axle Assembly
5	15x111	Nut, Flange	27	095329E700	Drag Link, Left
6	009x57	Bolt, Shoulder	28	094575E700	Spindle Assembly, Right
7	690183E700	Gear, Pinion	29	095328E700	Drag Link, Right
8	011x25	Ring, Snap	30	26x249	Screw
9	094121E700	Gear, Sector	31	091334	Bearing, Wheel
10	094123	Bearing	32	024373	Stem, Valve
11	001x84	Bolt	33	091923	Tire *
12	1001121E700	Plate, Steering	--	407924	Tube
13	094006E700	Plate, Engine	34	094578-601	Wheel and Tire Assembly
14	015x88	Nut, Flange	35	17x195	Washer
15	15x118	Nut, Flange	36	17x192	Washer
16	1001270E700	Bracket, Hanger	37	17x113	Washer
17	094007E700	Axle, Hanger	38	094618	Hub Cap
18	01x146	Bolt	39	26x267	Screw
19	030x49	Pin, Cotter	40	054789	Bellows
20	690150	Bearing	41	0025x3	Bolt
21	094576E700	Spindle Assembly, Left	42	17x146	Washer
22	01x111	Bolt			

* When you order a tire, make sure to give the brand name of the tire so that the tread pattern on the tire will match.

MODEL 405001x78B

REPAIR PARTS MOWER HOUSING SUSPENSION



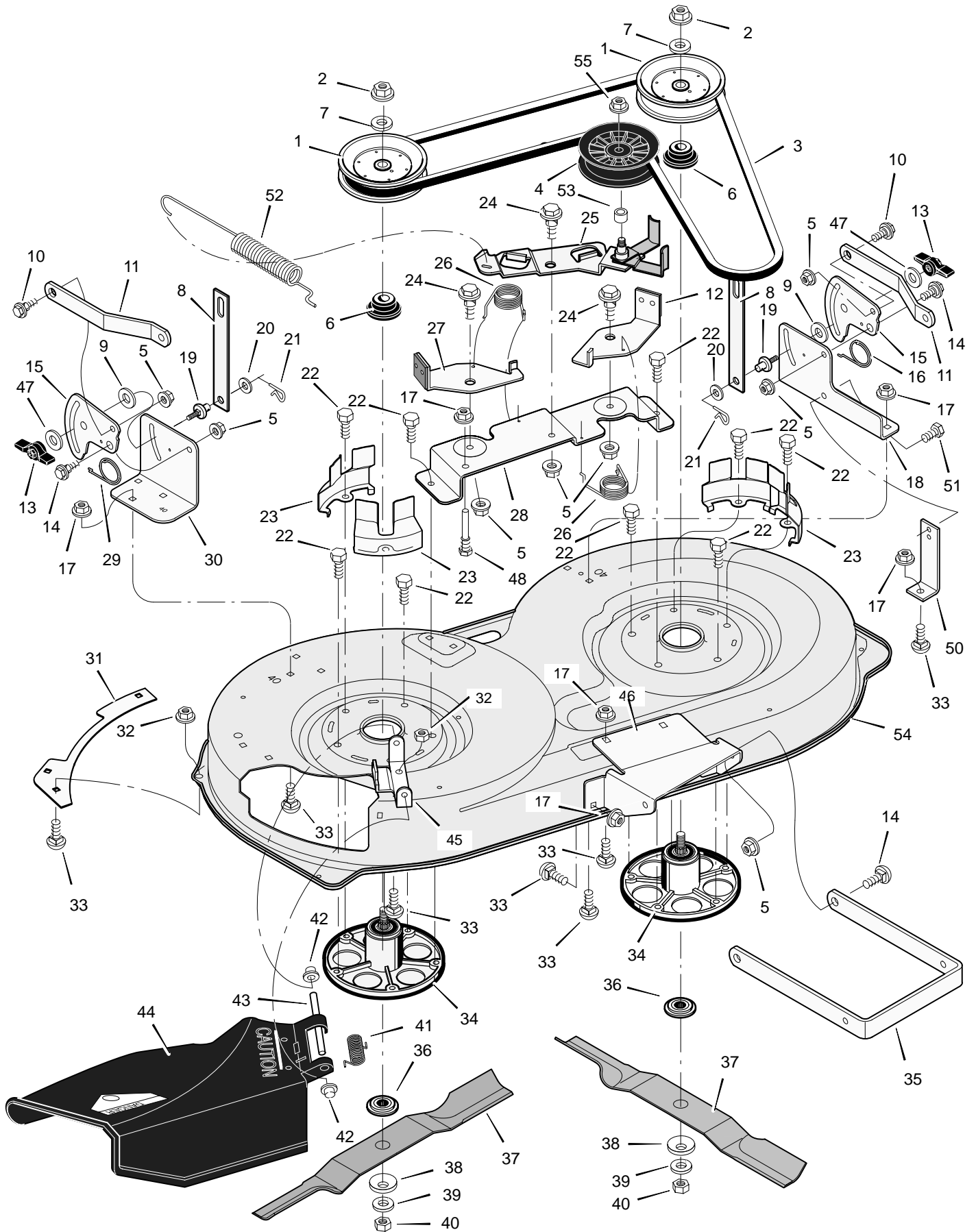
MODEL 405001x78B

REPAIR PARTS MOWER HOUSING SUSPENSION

Key No.	Part No.	Description	Key No.	Part No.	Description
1	092698	Grip	22	17x168	Washer
2	094346 Z	Handle, PTO	23	017x57	Washer
3	094022 Z	Pad, Switch	24	0031x4	Pin, Hair
4	0025x3	Bolt	25	017x91	Washer
5	092697	Grip	26	002x85	Bolt, Carriage
6	166x40	Spring	27	1001111E700	Lever Assembly, Lift
7	17x103	Washer	30	094067	Pin
8	690533	Handle, Lift	31	094055E700	Bracket, Rear Suspension
9	94017 Z	Lever, PTO	32	690151	Spacer, Lifter
10	009x39	Bolt, Shoulder	33	009x53	Bolt, Shoulder
11	030x20	Pin, Cotter	34	094015E700	Bracket, Pivot
12	17x102	Washer	36	17x191	Washer
13	094004 Z	Link, PTO	37	015x84	Nut, Flange
14	015x84	Nut, Flange	38	165x131	Spring
15	26x249	Screw	39	015x68	Nut, Flange
16	166x39	Spring	40	094005E700	Bracket, PTO
17	94018E700	Bracket, PTO	41	094027E700	Hanger, Left Deck
18	165x118	Spring	42	094026E700	Hanger, Right Deck
19	690394E700	Crank, PTO	43	094158Z	Rod, Hanger
20	690212E700	Link, Lift	44	094058E700	Bracket, Suspension
21	690122E700	Link, Lift Handle	45	1001098E700	Plate, Stiffening

MODEL 405001x78B

REPAIR PARTS MOWER HOUSING



MODEL 405001x78B

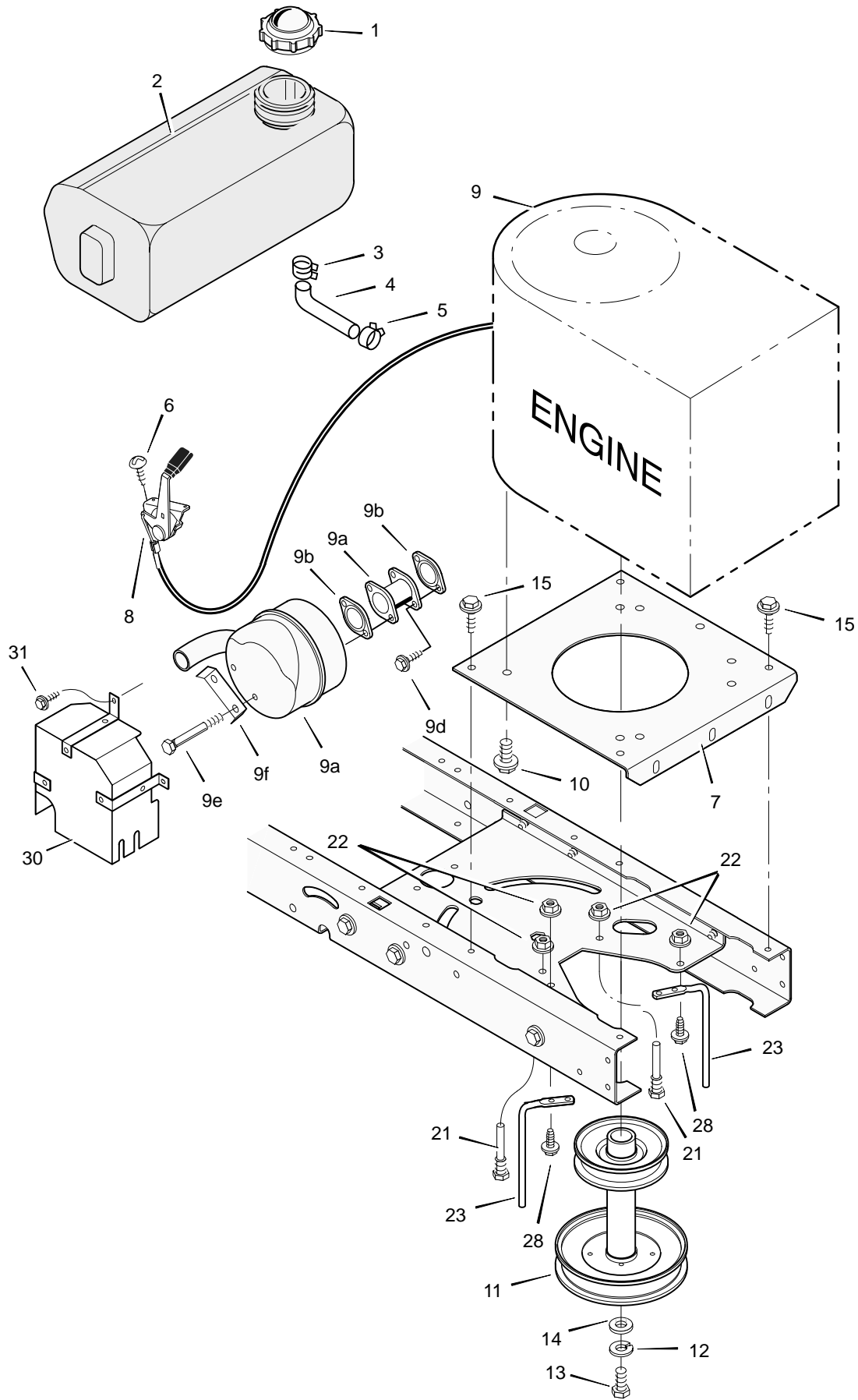
REPAIR PARTS MOWER HOUSING

Key No.	Part No.	Description	Key No.	Part No.	Description
1	092851	Pulley, Jackshaft	29	166x42	Spring
2	15x140	Nut, Hex	30	094142E700	Bracket, Suspension
3	037x62	Belt, Mower Drive	31	091770E700	Plate
4	690387	Pulley, Idler	32	015x88	Nut, Flange
5	015x84	Nut, Flange	33	002x53	Bolt, Carriage
6	1001197	Spacer, Pulley	34	1001200	Mandrell
8	690212E700	Link, Lift	35	690539E700	Bracket, Suspension
9	094137	Pad, Friction	36	690411	Adapter, Blade
10	009x52	Bolt, Shoulder	37	095103E701	Blade
11	094055E700	Bracket, Suspension	38	17x166	Washer
12	094049E700	Pad Assembly, Left Brake	39	17x165	Washer
13	094068	Knob	40	15x100	Nut
14	009x51	Bolt, Shoulder	41	0166x4	Spring
15	094128E700	Plate, Suspension	42	028x23	Cap, Push On
16	166x43	Spring	43	094957 Z	Rod, Pivot
17	015x79	Nut, Flange	44	094707	Deflector Assembly
18	094143E700	Bracket, Suspension	45	094956E700	Bracket, Deflector
19	095194	Pin, Hanger	46	094144E700	Bracket, Front Hanger
20	017x91	Washer	47	017x45 Z	Washer
21	0031x4	Pin, Cotter	48	094781	Guide, Belt
22	0025x7	Bolt	50	094681E700	Bracket, Support
23	094051E700	Cover, Pulley	51	26x249	Screw
24	009x39	Bolt, Shoulder	52	165x119	Spring, Extension
25	690408E700	Arm, Idler	54	094141E700	Housing, Blade *
26	0166x41	Spring	55	015x98	Nut, Flange
27	094047E700	Pad Assembly, Right Brake	1-55	776001	Complete Mower Housing Assembly
28	094145E700	Bracket Assembly, Brake			

* Includes Key No. 17, 18, 30, 31, 32, 33, 45, 46, 47 and 51.
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MODEL 405001x78B

REPAIR PARTS ENGINE MOUNT

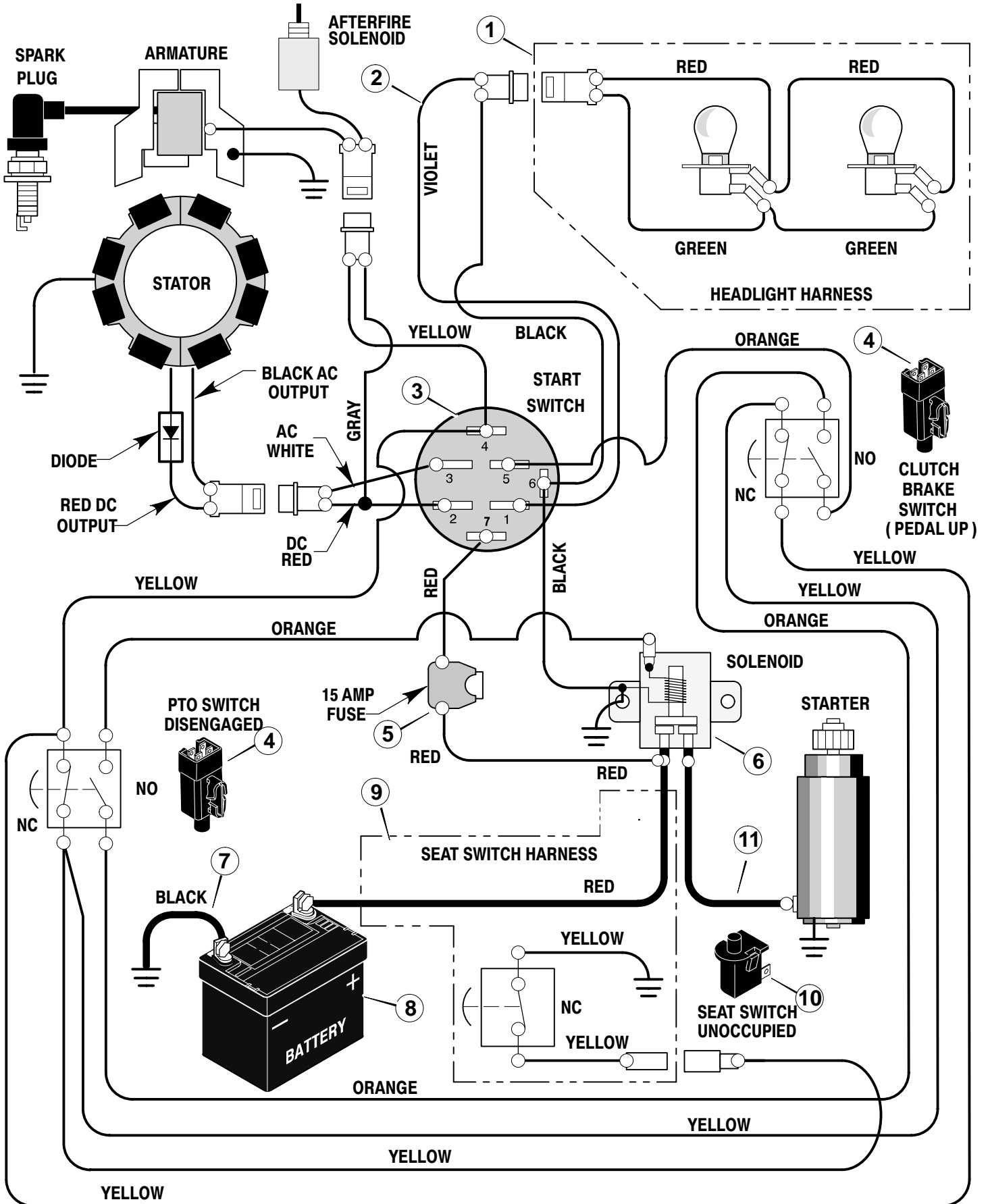


Key No.	Part No.	Description
1	092317	Fuel Cap *
2	092342	Fuel Tank
3	095197	Hose Clamp *
4	7601033	Fuel Line *
5	095197	Hose Clamp
6	26x201	Screw
7	094006E700	Plate, Engine
8	092371	Throttle Control
9	-----	Engine
9a	690436	Muffler
9b	091309	Gasket, Muffler
9c	095207	Adapter, Muffler
9d	06x103	Screw, Adapter
9e	009x59	Bolt, Muffler
9f	092378	Lock, Screw
10	0025x7	Bolt, Engine Mount
11	690439 Z	Stack Pulley Assembly
12	019x35	Lockwasher
13	01x140	Bolt, Hex
14	17x170	Washer
15	26x249	Screw
21	093349	Guide, Belt
22	015x79Z	Nut, Flange
23	094384	Guide, Belt
28	025x15	Screw
30	092550	Shield, Heat
31	26x263	Screw

* These parts are included with Key 2.

MODEL 405001x78B

REPAIR PARTS ELECTRICAL SYSTEM



Key No.	Part No.	Description
1	250x92	Harness, Light Wire
	92372	Socket, Light
	90084	Bulb, Light
2	250x87	Harness, Chassis Wire
3	92556	Switch, Ignition
	20729	Key, Ignition
	91489	Nut, Hex
	91488	Cap, Ignition
4	94136	Switch, Limit
5	54212	Fuse
	407078	Holder, Fuse
6	94613	Solenoid
	26x229	Screw, Mounting
	15x116	Locknut
7	24x32	Cable, Battery Ground
	26x213	Screw, Ground Cable
8	21075	Battery
	2x82	Bolt, Carriage
	14x79	Wingnut
	690604	Boot, Battery
9	250x67	Harness, Seat Switch Wire
10	94159	Switch, Seat Sensor
11	24x31	Cable

